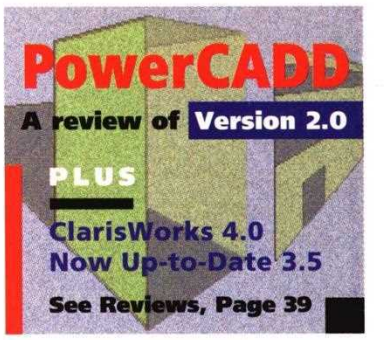
MacWEEK

07.10.95 | *The Newsweekly for Macintosh Managers* | VOLUME 9 NUMBER 27



Apple: Market share no longer top priority

By Jon Swartz and Robert Hess

With Windows 95 ahead and an unsuccessful marketing plan behind it, Apple is radically changing how it markets and sells Macs.

At a meeting of European managers in London in May, Dan Eilers, senior vice president of Apple Worldwide Marketing & Customer Solutions, outlined a new marketing approach that signals a major philosophical shift in how Apple will do business. He also indicated how the company will respond to Microsoft Corp.'s Windows 95.

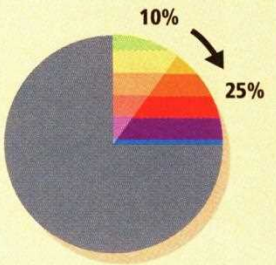
According to sources, Apple has ditched its ambitious five-year plan to increase the Mac OS

See Eilers, Page 92

Apple's abrupt change in marketing plans

Before

Increase Mac OS market share from 10% to 25% by getting new customers.



After

Increase revenue by selling more products and services to its 16 million current customers worldwide.

- ☑ CPU
- ☑ Peripherals
- ☑ Software
- ☑ Services
- ☑ Consumables
- ☑ Content

Mac OS Update 2 due

By Stephen Howard

Apple is reportedly preparing another care package of operating system enhancements for Macintosh users. System 7.5 Update 2.0, said to be in the early stages of development, will bring elements of the PCI Macs' OS to other CPUs. But sources said the tuneup will not deliver the new 680x0 emulator to owners of NuBus-based Power Macs.

The long-awaited dynamic-recompilation (DR) emulator built into the ROMs of the 9500, which improves the performance of 680x0 applications, is not likely to be included with System 7.5 Update 2.0 for technical reasons. According to public comments by Apple engineers, the older ROMs in first-generation Power Macs flush the on-chip caches of the PowerPC 601 so often that the speedup from dynamic recompilation is lost. A backward-compatible DR emulator must await a large package of ROM patches, which

See Update, Page 92

NEWSPAPER SECOND CLASS

CE plans three-tiered QuickMail update path

By Nathalie Welch

Eager to slake customers' thirst for Mac e-mail features, CE Software Inc. will soon ship a QuickMail upgrade with server-based rules and drag-and-drop message handling for clients.

CE plans to deliver QuickMail 3.5 by late August; the company also outlined features slated for two subsequent upgrades: Version 3.7 is expected in December, followed by QuickMail 4.0, which is scheduled for April 1996.

Expanding upon the client-based mail rules in last year's QuickMail 3.0, Version 3.5 will offer a server-based, Power Mac-native MailManager. In the user's absence, the server will forward, delete or reply to mail. Just as with the current MailManager, action triggers will include sender address, recipients or words in the message body. However, the server rules will not be able to file mail, since QuickMail message folders are stored on each client Mac.

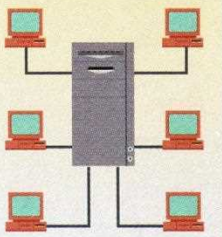
The new server will not be faster than the current one, but it will be much more reliable, said Matt Kramer, QuickMail product line manager. It will work with Version 2.6 clients, but that combination won't be recommended.

The non-native MailManager client in Version 3.5 will be faster than the current version because of better algorithms, Kramer said.

See QuickMail, Page 90

CE Software's mail route

QuickMail 3.5



- Server-based rules
- Drag-and-drop e-mail handling
- Stylized text

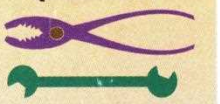
August 1995

QuickMail 3.7

- Telecom Server dial-up, TCP/IP
- Integrated remote client
- Automatic data compression
- Improved file transfer

December 1995

QuickMail 4.0



- Windows client gets TCP/IP
- Admin mail-management tools
- Multiple public folders
- Improved usage monitoring
- Enhanced QM Forms application

April 1996

Avid builds on 8100/100 for video editing

By David Morgenstern

Avid Technology Inc. will put a new facade on its video production line this month with the release of Media Processor, an all-in-one 601-based Power Mac hardware system. The new six-slot design will be offered as part of the company's Media Composer hardware/software packages, which range in price from $17,000 to $90,000.

Media Processor will use an Apple-manufactured 8100/100 motherboard and feature a high-style enclosure with panels that swing open for easy access to install drives, cards and memory. Unlike the 8100's tower, the new Avid system will sit horizontally on the desktop and can be mounted in a rack.

See Avid, Page 90

Mactivity serves up Java, WinSock 1.1 for the Mac

By Clifford Colby

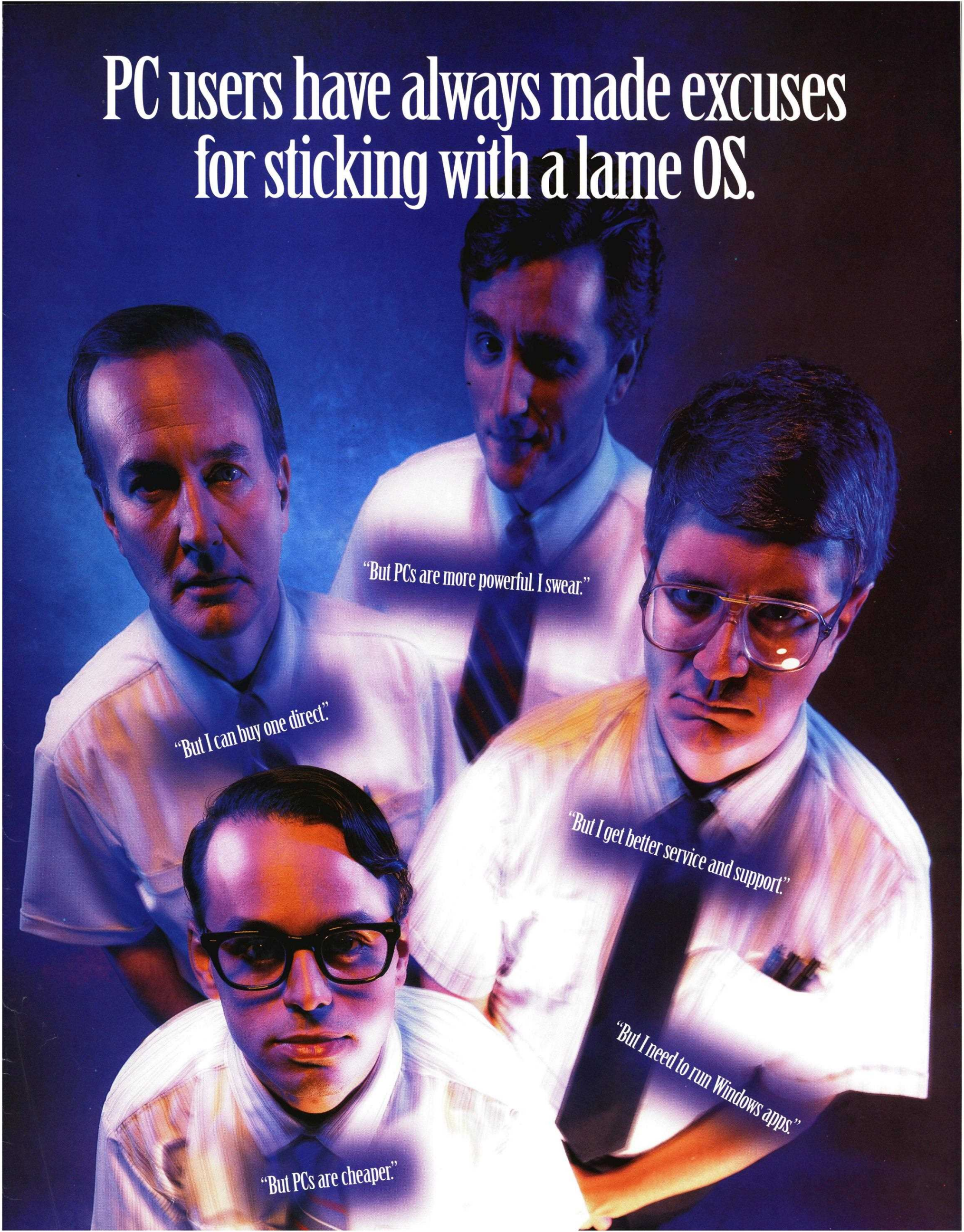
More than 100 companies plan to take advantage of this week's Mactivity '95 conference to show off new products and unveil plans. The convention in San Jose, Calif., will include announcements that Apple will be reaching out to Windows developers and Sun Microsystems Inc. will be demonstrating HotJava for the Mac.

- **Apple and NetManage Inc.** The two companies this week will reveal plans to incorporate NetManage's Window Sockets 1.1 libraries in Apple's new networking architecture, Open Transport. The popular WinSock API has a common interface between a variety of Windows applications and TCP/IP. With the addition, developers will be able to port their TCP/IP-aware applications to the Mac without rewriting the networking portion of the code.

"This is a solution for those who are Socket-oriented, and it

See Mactivity, Page 90

PC users have always made excuses for sticking with a lame OS.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"But I get better service and support."
"But I need to run Windows apps."
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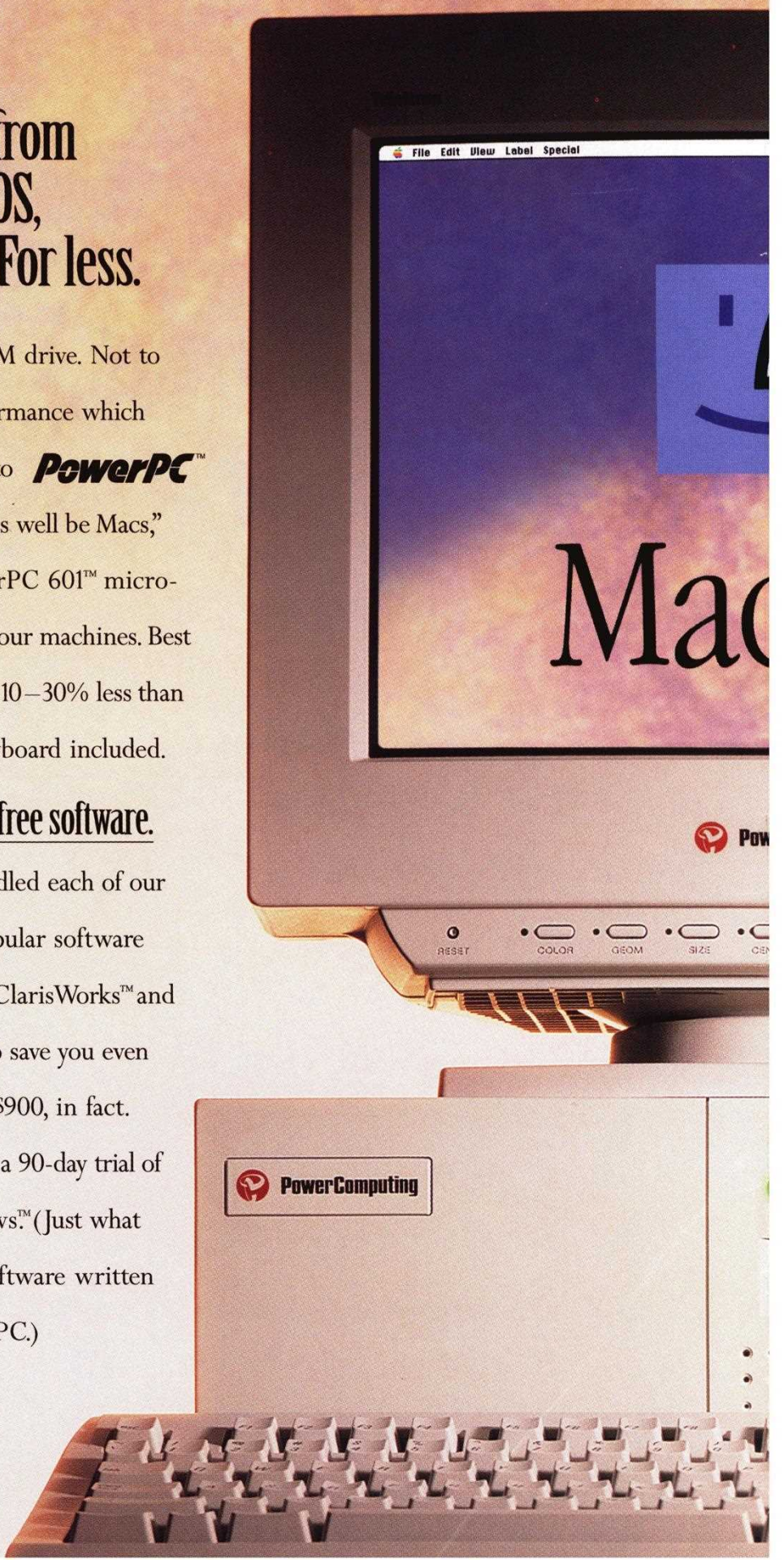

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MacWEEK

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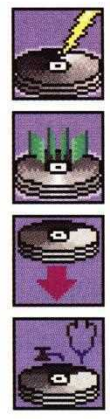
Success and problems with the new LaserWriter 8.3 printing package. See MacInTouch, Page 50.

Increase storage performance with RAID software. See Solutions, Page 49.



When telecommunications giant US West needed to create new systems for services, the database it chose was FileMaker Pro. See Problem Solving, Page 51.

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Engineered Software's PowerCADD 2.0 builds up print, network support • Now Up-to-Date and Contact 3.5 bundle adds data entry • PathWay Access for Mac 3.1 • ClarisWorks 4

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MACWEEK INSIDER STEPHEN HOWARD

FUD damage in Iowa

We now have an e-mail road map from CE Software Inc. I think I'll file it under the heading "QuickMail, Promised Features," so the folder will come neatly after the one labeled "QuickMail, Moribund Integration Strategies." That folder was getting a bit full anyway.

It's not just the company from West Des Moines, Iowa, that's crowding my file cabinet with promises. Every e-mail vendor has a big plan or two. It seems all that these software makers have produced in the past couple of years are clouds of strategies that buzz around users' heads like gnats.

It's all been bunk. And the result — please, customers, correct me if I'm wrong — is that Mac users have watched their e-mail systems grow long, gray beards while their creators tilted at windmills or ran from each others' shadows.

First and foremost was the alleged criminal mastermind of FUD (fear, uncertainty and doubt), Microsoft Corp. The No. 2 company in the Mac mail market chucked its jerry-built pair of acquired e-mail products and laid out a grand plan for Microsoft Exchange, a Windows NT-based server with multiplatform clients.

In short, Microsoft orphaned its Mac installed base — and baldly told users exactly what it was doing — in favor of a future server tied to the mail features of Windows. None of it has shipped.

Second, we have Lotus Development Corp.'s cc:Mail, the dominant LAN mail system for Intel-standard PCs and previously QuickMail's strongest Macintosh challenger. After buying cc:Mail Inc., Lotus wanted synergy with Notes, so the company announced the Lotus Communications Server. This messaging hub was to link cc:Mail and Notes, forming a groupware layer across all operating systems. Neato! Never shipped.

Third is Novell Inc., which bought WordPerfect Corp. and its e-mail/group-scheduling combo. Now called GroupWise, the product was to absorb Novell's Message Handling Service (MHS) and become yet another universal messaging repository. Although GroupWise 4.0 was a decent upgrade, MHS remains intransigently independent.

Last, we have Apple and its home-grown white elephants, PowerTalk and PowerShare. Apple's message was the same as Microsoft's: E-mail will be part of the operating system — get out of the way.

These multibillion-dollar companies' plans so shook $12-million-per-year CE Software that it decided to avoid conflict, and it retrofit QuickMail to run on top of the others' APIs.

I'm glad CE has found its courage and is rejoining the e-mail fray.

CE shipped versions for PowerTalk and MHS and planned one for Microsoft's MAPI (Messaging API). Then it noticed that no one was buying them. CE also began touting a groupware strategy based on future compatibility with SQL databases. This effort, driven by CE's acquisition of Powercore Inc., has distracted the company without reward for two years.

In the interim, CE has delivered to its core customers only QuickMail 3.0, a half-hearted upgrade that cost too much. What a waste. CE retreated from the e-mail market just as the giants of the industry were also retreating.

Into the vacuum swept SoftArc Inc.

Since Version 2.5, SoftArc's speedy First-Class has been a real threat to QuickMail. FirstClass works in client-server mode for both Macs and PCs over AppleTalk, TCP/IP or IPX protocols. It supports multiplatform remote clients and shared conferences, and it has substantial Internet add-ons.

What SoftArc lacked until recently was a strategy to slow it down. Now it has one — further Internet integration. Perhaps this will give CE a chance to catch up. But if CE is really lucky, SoftArc will acquire something.

I'm glad CE has found its courage and is rejoining the e-mail fray with QuickMail 3.5. The clear air of features-based competition is a lot more refreshing than vaporous scheming. □

Stephen Howard is a senior news editor at MacWEEK. He welcomes feedback at stephen_howard@macweek.ziff.com.

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Symantec nets Delrina

Buyout delivers fax, utility apps for $415 million

By James Staten

Symantec Corp. continued to feed its acquisition habit last week, gobbling up Canadian fax and utility software maker Delrina Corp. for an estimated $415 million.

The stock buyout will enable Cupertino, Calif.-based Symantec to integrate Toronto-based Delrina's popular fax and telephony applications, primarily WinFax and FaxPro for Macintosh, with its communications applications, including pcAnywhere for Windows and Act!, a cross-platform personal information manager.

Symantec said Delrina's three senior executives — CEO Dennis Bennie, President Mark Skapinker and Chief Technology Officer Bert Amato — will remain in management roles and join Symantec's board. Delrina co-founder Lou Ryan will continue to work in the company's sales organization.

Symantec said it plans to maintain Delrina's Toronto headquarters; about 200 of Delrina's 750 workers are expected to be laid off. Stockholders will receive six-tenths of a share of Symantec stock for each share of Delrina stock. The merger is expected to be completed in November.

In related news, Delrina reported a sharp increase in sales for its fiscal 1995 year ended June 30. Sales improved 33 percent, to $97 million from $73 million in 1994. Fourth-quarter sales were $19.7 million, down 15 percent from $23.2 million in the same quarter a year ago. □

PowerBook 5000 RAM ready to go

By James Staten

Before Apple has even acknowledged the existence of PowerPC-based PowerBooks, memory vendors are poised to ship RAM upgrades for the new laptops.

Peripheral Outlet last week became the first to announce memory upgrades for the forthcoming PowerBook 5000 series machines.

The company said it is ready to ship RAM memory modules for the RISC PowerBooks, which reportedly will ship in August (see MacWEEK, May 1, Page 1).

Peripheral Outlet will offer memory modules from 4 Mbytes to 40 Mbytes. The 4-Mbyte module will be priced at about $299, and the 16-Mbyte module will carry a $999 price tag. Pricing for the other modules has not been set.

With 8 Mbytes of RAM on the motherboard, PowerBook 5000-series machines will be able to handle up to 48 Mbytes of RAM.

Peripheral Outlet said the machines will use memory modules that contain 70-nanosecond dynamic RAM chips similar to those found in PowerBook Duo memory modules. However, only TSOP (thin small-outline package) chips will be used, because of space constraints inside the new machines, the company said.

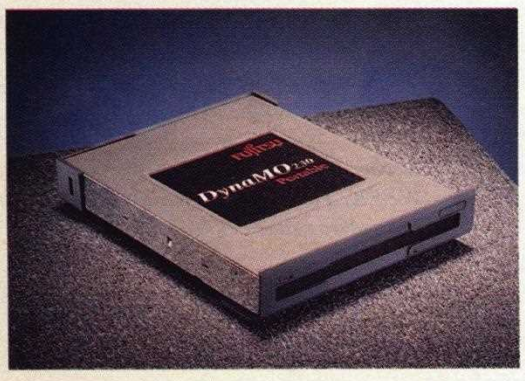
A similar issue arose with the PowerBook 500s, when memory vendors, looking to cut costs, shipped the larger SOJ (small-outline J-lead) DRAM, which did not meet Apple's specifications for these laptops.

Peripheral Outlet of Ada, Okla., can be reached at (405) 332-6581 or (800) 331-3456; fax (405) 436-2245; peripheral@applelink.apple.com. □

Fujitsu to drive PowerBook 5000 series

Peripheral Outlet isn't the only one getting an early start on PowerBook 5000 products. Fujitsu Computer Products of America Inc. this week will announce that its new 17mm-high magneto-optical drive will work in Apple's upcoming portables.

Fujitsu's 3.5-inch DynaMO 230 Portable is slated for a fourth-quarter release. Instead of a SCSI interface, the $499 drive will use an Enhanced IDE (Integrated Drive Electronics) interface and will fit in the PowerBook 5000's media bay, Fujitsu said. According to sources, Apple may even offer the 8.8-ounce MO drive as an option instead of a floppy disk drive or 3.5-inch CD-ROM drive.



Later this year, Fujitsu's 17mm-high DynaMO 230 Portable drive will let PowerBook 5000 users read and write 3.5-inch magneto-optical cartridges.

The DynaMO 230 Portable will use standard 3.5-inch MO cartridges in capacities of 230 or 128 Mbytes. It will provide an average seek time of 49 milliseconds and an average data transfer rate of 1.6 Mbytes per second. The drive will require 4.2 watts when reading or writing.

Fujitsu Computer Products of America Inc. of San Jose, Calif., can be reached at (408) 432-6333 or (800) 626-4686; fax (408) 894-1706. — *By David Morgenstern*

Memory swaps dim between new 9500s

By James Staten

All DIMMs are not created equal. According to Apple, some dual in-line memory modules designed for the Power Mac 9500s may contain dynamic RAM chips that work fine in the 120-MHz version of the machine but fail when used with the 132-MHz unit.

"Unlike on previous [Macs] where there were separate clock chips for the processor and logic board, we clock the entire logic board off the main processor clock chip," said Dave Limp, Apple product manager for the 9500s.

He said that in the company's qualifying process Apple has tested DRAM from various manufacturers on in-house boards running at speeds up to 150 MHz and has found some chips that fail at speeds above 120 MHz. Such chips are being listed as qualified for the 9500/120 but not for the 9500/132.

Apple said it is important for 9500/132 owners to make sure the memory they purchase contains DRAM chips qualified for use on the faster processor.

However, DRAM failure could become an issue for 9500/120 owners as well. Because Apple made it easy to upgrade the 9500 CPU by mounting it on a daughtercard, users who later upgrade their machines could also run into the clock chip problem.

Apple said that its qualified memory will be guaranteed to work with future processors up to 150 MHz. □

Execs bolt from Newton, Apple Japan divisions

By Jon Swartz

Apple's corporate ranks received a double whammy last week with the sudden defections of two prominent executives.

Sources said Apple's Shane Robison left a week after being named head of PowerBook engineering.

Frank Seiji Sanda, president of Apple's Japan division, quit after less than a year on the job because of clashes with upper management over Japan market strategy, Apple said.

The resignation comes at a time when Apple Japan is nearing the $2 billion sales mark — twice its 1994 sales — and is rapidly increasing its market share as the second-largest personal computer vendor in Japan. Apple has 15 percent of the market in Japan, according to International Data Corp. of Framingham, Mass.

Meanwhile, Shane Robison, vice president of Newton Systems Division, was lured away by a lucrative cash offer to become senior vice president of engineering at Cadence Design Systems Inc., a CAD developer based in San Jose, Calif.

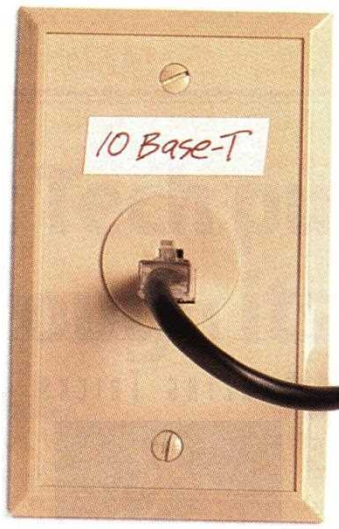
Robison could not be reached for comment.

Seiji Sanda, who was recruited from the Japan unit of Motorola Inc. in July 1994, told The Wall Street Journal last week he resigned after his Cupertino, Calif.-based superiors rejected his plan to fortify the company's operations in Japan and change the way it sells Macs in Japan.

According to Seiji Sanda, Apple Japan's 250-person work force is overworked, and the company needs to market the Mac to different types of customers for it to maintain its blistering sales pace.

Apple Pacific President John Floisand acknowledged disagreements over management policy but added that Apple's board had asked Seiji Sanda to step down.

Todd Bakar, an analyst at Hambrecht & Quist Inc. of San Francisco, called the defections a "major blow" to Apple. "Apple Japan accounted for one-fifth of the company's annual revenue," he said. □



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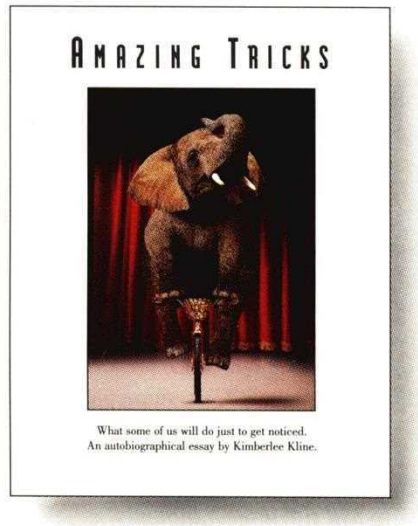
Tiny had the hard part. Scanning it was easy.



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1st Tech puts RAM through its paces

By James Staten

Determining whether a memory module is a nag or a thoroughbred no longer requires a degree in electrical engineering, thanks to 1st Tech Corp. and Dark Horse Inc., which are now shipping a memory tester compatible with most Mac RAM modules.

The Sigma LC, priced at $1,595, is a 3-pound portable device that performs a series of comprehensive tests at a rate of 4 seconds per megabyte. The tests include address refresh, noise, sleep mode, timing, voltage, speed and refresh type.

The unit can test 30- and 72-pin SIMMs, 168-pin DIMMs (dual in-line memory modules), static RAM, and 5-volt flash memory, 1st Tech said. With a $319 notebook base and adapter kit, users can also test PCMCIA memory cards as well as all the nonstandard memory found in PowerBook 100-, 200- and 500-series machines, except the PowerBook 150, the company said.

The Sigma LC was designed by Dark Horse of Austin, Texas, and is being manufactured by 1st Tech.

In related news, Advantage Memory Corp. and Technology Works Inc. last month shipped DIMMs for the Power Mac 9500 in configurations of up to 68 Mbytes.

Advantage's modules are covered by a lifetime warranty and are priced as follows: 4 Mbytes for $290, 8 Mbytes for $450, 16 Mbytes for $925, 32 Mbytes for $1,450 and 64 Mbytes for $2,460.

TechWorks' modules are also covered by a lifetime warranty and are priced at $315 for an 8-Mbyte module, $627 for 16 Mbytes, $1,120 for 32 Mbytes and $2,230 for 64 Mbytes.

1st Tech Corp. of Austin, Texas, can be reached at (512) 258-3570 or (800) 533-1744; fax (512) 258-3689; 1st_tech@ccmail.compuserve.com.

Advantage Memory Corp. of Irvine, Calif., can be reached at (714) 453-8111 or (800) 245-5299; fax (714) 453-8158.

Technology Works Inc. of Austin, Texas, can be reached at (512) 794-8533 or (800) 704-0189; fax (512) 794-8520. □

Optima deals PCI card, CD-R pack

Users can buy card with drives, arrays

By David Morgenstern

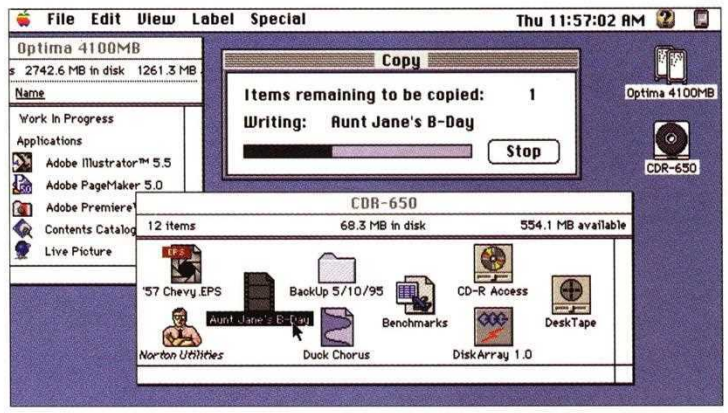
Optima Technology Corp. in June boarded the PCI bandwagon with a card for its storage products. The company also hit the charts with a CD-Recordable package.

Optima's Fast and Wide SCSI-2 PCI card is $398 to purchasers of Optima's hard drive and array products and $295 to owners of its NuBus accelerators. The 3.6-, 4.2-, 8.2- and 18-Gbyte Fast and Wide dual-drive arrays bundled with the PCI card cost $4,820, $3,669, $5,239 and $9,995, respectively.

According to Optima, an array built with four 3.6-Gbyte units and four PCI cards has a sustained data transfer rate of 60 Mbytes per second.

The company also shipped Diskovery 650CDR, a double-speed CD-R system with a 1-Mbyte RAM buffer.

The $1,850 drive supports multisession Mac Hierarchical File System, CD-ROM XA, CD-I, Digital Audio, CD-Bridge, Master CD and ISO 9660 formats.



The Diskovery 650CDR features CD-R Access, proprietary software that supports Finder commands such as drag-and-drop copying, Find and Delete.

The company also hit the charts with a CD-Recordable package.

Optima's CD-R Access software, letting users mount and interact with CD-R discs as they would with other removable media, such as SyQuest-compatible and magneto-optical cartridges.

Using a hard drive-based directory and caching scheme, CD-R Access supports drag-and-drop file copying as well as system commands such as Find and Delete. Although files are not actually deleted on the WORM (write-once-read-many) CD-R disk, the software removes the file from the volume's directory.

Optima said the discs can be read by multisession-compatible CD-ROM players via its free CD-R Access for CD-ROM driver software. The reader is currently available for Macs only; a Windows version is slated for later this summer.

Optima Technology Corp. of Irvine, Calif., can be reached at (714) 476-0515; fax (714) 476-0613; optima@applelink.apple.com. □

ImagerPlus printers add high resolutions

By Matthew Rothenberg

NewGen Systems Corp. has extended the horizons of its line of high-resolution, oversize laser printers with two new models.

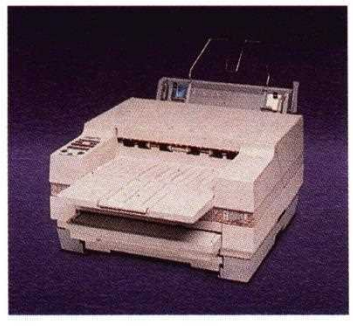
According to the company, the $7,995 ImagerPlus 18xf is the first printer to use the 900-dpi TEC A-659 engine. NewGen said the device offers interpolated output of up to 1,800 by 900 dpi. The ImagerPlus 18xf ships standard with 48 Mbytes of RAM.

The ImagerPlus 12xf is available for $6,195, the same price as its predecessor, the Imager Plus 12. The printer is based on the 600-dpi TEC A-655 engine and can output up to 1,200 by 1,200 dpi via software interpolation. It ships standard with 40 Mbytes of RAM.

Both the ImagerPlus 18xf and 12xf handle paper measuring up to 11.9 by 19.5 inches and output up to eight letter- or 4.5 tabloid-size pages per minute, the company said.

They ship with the Level 2 version of PhoenixPage, Phoenix Technologies Inc.'s PostScript interpreter, and include 60 Type 1 fonts. The printers also include proprietary image-enhancement technology, NewGen said.

Both models offer automatic switching among LocalTalk, RS-232C serial and Centronics parallel interfaces, and both include a SCSI port. A multiprotocol Ethernet interface ships standard with the ImagerPlus 18xf and is available for $399 to users of the ImagerPlus 12xf.



NewGen's ImagerPlus 18xf delivers up to 1,800-by-900-dpi output and handles oversize pages.

The printers run on a 33-MHz AMD 29030 RISC processor and can be outfitted with up to 192 Mbytes of RAM via industry-standard SIMMs. Both models ship standard with a 250-sheet universal paper cassette and a 150-sheet feeder; a second 250-sheet cassette is $169.

NewGen Systems Corp. of Fountain Valley, Calif., can be reached at (714) 641-8600 or (800) 756-0556; fax (714) 436-5189. □

For the record

The June 26 First Look at Insignia Solutions Inc.'s SoftWindows 2.0 (Page 1) contained incorrect phone numbers. Insignia can be reached at (415) 335-7100; fax (415) 335-7105. Also, SoftWindows is currently at Version 1.0.

Contrary to an article in the June 5 issue (Page 7), Xante Corp.'s LaserPress 1800 prints letter-, tabloid- or oversize pages at 1,800 by 1,800, 1,800 by 900 and 900 by 900 dpi, respectively, with the standard 48 Mbytes of RAM.

Three Tek color printers flesh out Phaser family

By Donna Raskin

Tektronix Inc. has toned up its color printer lines, eliminating some models and introducing three new machines.

The new printers include one aimed at the high-end graphics market as well as two office machines, the company said.

The Phaser 480X, a $14,995 full-bleed tabloid-size dye-sublimation printer, replaces the Phaser 480 and adds proprietary color calibration as well as support for Desktop Color Separation output.

The PostScript Level 2 printer outputs continuous-tone 300-dpi digital proofs measuring up to 12 by 18 inches. The device includes a 24-MHz AMD 29000 RISC processor and 32 Mbytes of RAM, expandable to 112 Mbytes.

The printer ships with a suite of Tektronix's own software, including PhaserMatch, a color-calibration application, and Tek-Color Dynamic Correction, proofing software that simulates a variety of color output devices.

For the office, Tektronix has replaced its Phaser 540 color laser printer with the Phaser 540 Plus, which costs $8,995, the same as its predecessor.

Tektronix said the Phaser 540 Plus offers a faster time to first print than the earlier device and handles legal-size output. Like the Phaser 540, the new PostScript Level 2 printer can output four color or 14 monochrome pages per minute at up to 600 dpi.

The machine comes standard with a 32-MHz AMD 29030 RISC chip and 20 Mbytes of RAM, expandable to 52 Mbytes.

In addition, Tektronix has folded its two earlier thermal-wax printers into a single $3,695 model. The company said its new Phaser 240 offers the features of its higher-end Phaser 220i at the same price as the Phaser 220e.

The 2-page-per-minute Level 2 printer handles paper and transparencies and produces continuous-tone images at up to 600 by 300 dpi. It includes a 16-MHz AMD 29000 RISC chip and ships standard with 5 Mbytes of RAM, which is expandable to 21 Mbytes.

Tektronix Inc. of Wilsonville, Ore., can be reached at (503) 682-7377 or (800) 835-6100. □

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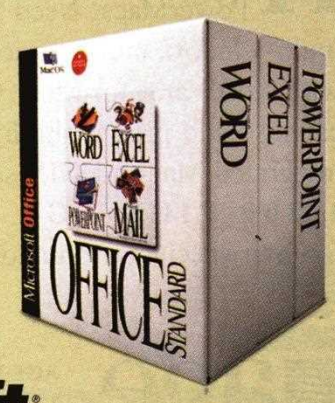

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WHERE DO YOU WANT TO GO TODAY?™

ATTO on PCI track with ExpressPCI

By David Morgenstern

ATTO Technology Inc. played its hand of PCI cards in June with the release of ExpressPCI, a new line of storage accelerator boards with an expandable architecture.

The Fast and Wide SCSI-3 cards are available with either one or two single-ended or differential connectors. The one- and two-port single-ended models are $395 and $895, respectively; the differential versions cost $595 and $1,195, respectively.

ATTO said each board uses a 40-MHz RISC processor and supports multiple block sizes, including sizes greater than 512 bytes. The dual-port models have a maximum data transfer rate of 40 Mbytes per second.

ExpressPCI cards are SCSI Manager 4.3-compatible, and the single- and double-port models can support up to 105 and 210 drive mechanisms, respectively.

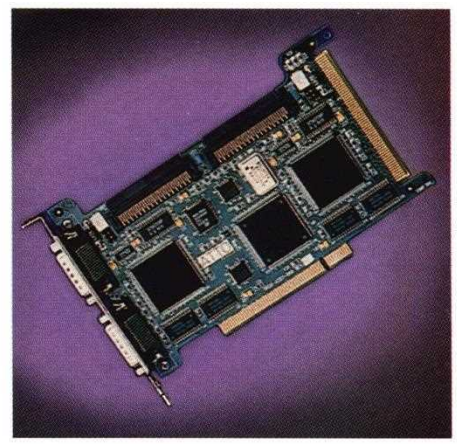
ATTO said a firmware upgrade that will add RAID levels 0, 1 and 5 to a card's flash memory should be ready in time for the Boston Macworld Expo in August. Pricing has not yet been set.

In addition to the storage interfaces, the cards include a PCI bridge connector for add-on modules from third-party developers.

ATTO said it expects a fourth-quarter release for a memory-caching module that can improve the performance of digital-video PCI cards that have insufficient real estate for large RAM caches. ATTO said a number of developers will support the memory module but declined to identify them.

The company said it is also co-developing modules that will offer serial SCSI-3 interfaces such as Serial Storage Architecture, aimed at RAID systems, and 1394, or FireWire, for digital VCRs and video cameras (see MacWEEK, Oct. 17, 1994, Page 6).

ATTO Technology Inc. of Amherst, N.Y., can be reached at (716) 691-1999; fax (716) 691-9353; atto@localnet.com. □



Bristling with connections, ATTO's dual-port SCSI PCI card sports internal and external Fast and Wide interfaces as well as a PCI bridge for add-on modules.

Sonnet takes over production of Mobius Speedster

Mobius Technologies Inc. may be dead, but its 68040 accelerator lives on, thanks to Sonnet Technologies Inc., which this month shipped an update to the product.

The Speedster, a 40-MHz 68040-based accelerator for the Mac IIx, IIcx, IIci and IIsi, received a software upgrade that makes it compatible with System 7.5. Sonnet also cut the price of the card: The base Speedster is priced at $399, and a unit equipped with a math coprocessor and 128-Kbyte cache is priced at $599. Both units are covered by a one-year warranty.

Sonnet added that it will offer technical support for the Speedster as well as all previous versions of the card Mobius sold.

Sonnet Technologies Inc. of Irvine, Calif., can be reached at (714) 261-2800 or (800) 786-6260; fax (714) 261-2461. □

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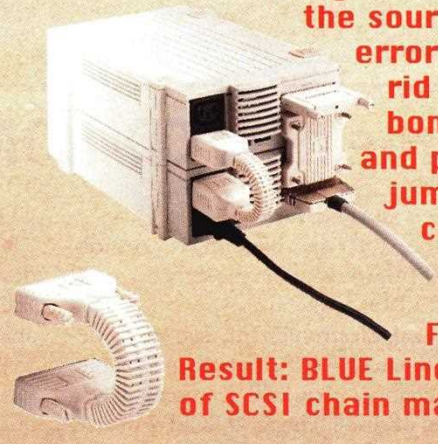

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PowerSecretary more articulate

By David Morgenstern

Articulate Systems Inc. in June enhanced the fluency of its PowerSecretary speech-to-text conversion application and delivered a new entry-level version for word processing.

Version 2.0.3 of the $2,495 software, now called PowerSecretary Power Edition, features automatic correction during dictation. When the user stops speaking for a specified interval, PowerSecretary suggests alternatives to recently transcribed words that it may have misunderstood. Articulate said the software now offers dictation speeds of up to 55 words per minute, about 15 percent faster than earlier versions.

The update also lets users move sets of vocabulary words and macros between files. It ships with more than 150 macros for the WordPerfect word processor.

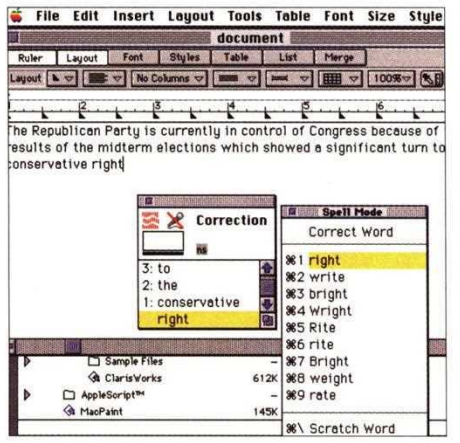
"[Scripting] takes some initial effort and voice-file maintenance, but it's fluid when it all comes together," said ergonomics consultant Gary Karp with Onsight Technology Education Service of San Francisco. Karp, who suffers from a repetitive stress injury, said, "PowerSecretary really makes you mobile in your desktop."

The Power Edition features a 120,000-word list and supports an active vocabulary list of 60,000 words. Articulate said the upgrade is free to users of Version 2.0.

Articulate also released a $995 entry-level version designed exclusively for use with WordPerfect. The custom version, which does not work in the Finder, supports an active dictionary of 30,000 words. Users can upgrade to the complete Power Edition for $1,750.

In addition, the company rolled out PowerSecretary MED, a $3,000 version optimized and expanded for medical applications. Users of the Power version can receive the MED upgrade for $550 through this month and $750 thereafter, the company said.

Articulate said the PowerSecretary software is not compatible with all Mac models and may require a NuBus card on some Macs. Furthermore, it is not compatible with the new Power Macintosh 9500, and the company has not set a date for a revision.



Articulate Systems' PowerSecretary 2.0.3 can automatically offer suggestions for recently recognized words it may have misunderstood.

Articulate Systems Inc. of Woburn, Mass., can be reached at (617) 935-5656 or (800) 443-7077; fax (617) 935-0490; voice@applelink.apple.com. □

UMAX rolls out scanner and bundles OCR

By Donna Raskin

UMAX Technologies Inc. is extending the horizons of its flatbed scanner line for corporate and graphics users.

Getting down to business, the company last week enhanced a variety of its scanner packages with Version 2.0 of Wordlinx, OCR software from UMAX subsidiary Maxsoft-Ocron Inc. of Taipei, Taiwan.

According to the company, Wordlinx 2.0 can recognize up to 150 characters per second with an accuracy rate of about 99.5 percent. The OCR software can differentiate between scanned text and images, and it can preserve text attributes, such as italics, point size and typeface. The software retails for $99.

Wordlinx 2.0 is available now with UMAX's Vista line, Gemini D-16 and UC1260 scanners, the company said.

On the graphics front, UMAX in September will ship its first large-format flatbed. Priced at $6,995, the Mirage D-16L features dual lenses that will enable users to capture 12-by-17-inch and 6-by-17-inch images at 400 by 800 dpi and 800 by 1,600 dpi, respectively. The device captures 30-bit color in a single pass, UMAX said, and it can scan a 12-by-17-inch, 400-dpi image in a little more than a minute.

Raising the res: The Mirage D-16L's dual lenses will let users scan 12-by-17-inch and 6-by-17-inch images at 400 by 800 dpi and 800 by 1,600 dpi, respectively.

The Mirage can handle both prints and transparencies, and it will ship with frame holders for batch scanning that can accommodate 32 35mm slides or eight 4-by-6-inch prints. It will connect to the Mac via a SCSI interface.

Besides Wordlinx 2.0, the scanner will ship with UMAX's proprietary MagiScan software, which features controls for batch scanning, eliminating moiré patterns and auto-exposure. It will also come with MagicMatch, a color-calibration package that supports Kodak Color Management System technology.

UMAX Technologies Inc. of Fremont, Calif., can be reached at (510) 651-8883 or (800) 562-0311; fax (510) 651-8834. □

Three new CD-ROM changers land on desktops

By David Morgenstern

Tuning up their disc-handling repertoires, a trio of storage vendors recently unveiled new CD-ROM jukeboxes.

▶ **Regal Electronics Inc.** last week debuted the CDC-4X, a small quadruple-speed changer that will let users play a handful of discs. The $899 SCSI-2 device, slated to ship in August, will use a magazine loader that holds up to five standard or 3.5-inch CDs. Regal said the unit will have an average disc-swap time of 4.5 seconds.

The compact CDC-4X will measure 2.8 inches high and sport a 7-by-9.2-inch footprint. Regal said it will support multisession Hierarchical File System, digital audio, CD-ROM XA and Photo CD formats.

▶ **Smart and Friendly** recently pared down the price of its recently shipped CDJ 7002 CD-ROM jukebox. Previously priced at $475, the double-speed 7002 now sports a $349 price tag. The caddyless unit holds up to seven discs and has an average swap time of 2.5 seconds, the company said. The drive supports multisession HFS, audio, CD-ROM XA and Photo CD formats, Smart and Friendly said.

▶ **Pioneer New Media Technologies Inc.** recently released its DRM-624X, a 4.4-speed changer. The unit uses a six-disc magazine and has an average swap speed of 5 seconds. The SCSI-2 drive features a data transfer rate of 676 Kbytes and an average access time of 150 milliseconds.

Pioneer said the $795 device supports multisession HFS, audio, CD-ROM XA and Photo CD formats.

Regal Electronics Inc. of Santa Clara, Calif., is at (408) 988-2288 or (800) 882-8086; fax (408) 988-2797.

Smart and Friendly, a division of High Technology Distributing Inc., of Van Nuys, Calif., is at (818) 994-8001 or (800) 366-6001; fax (818) 988-6581.

Pioneer New Media Technologies Inc., Multimedia and Mass Storage Division, of Long Beach, Calif., is at (310) 952-2111 or (800) 444-6784; fax (310) 952-2100. □

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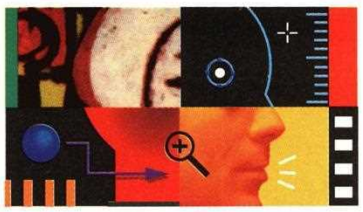

GA

RE-ARCHITECTING

PowerCADD 2.0 has enhanced layering control and network capabilities. See Reviews, Page 39.

Cross-platform titles from Oracle in cards

Media Objects now available

By Cate C. Corcoran

Entering a new market, database heavyweight Oracle Corp. in late June shipped Oracle Media Objects, its multimedia development environment.

Now available directly from Oracle and for download from the company's World-Wide Web site, the $495-list product will be priced at $99 through the end of 1995.

Oracle Media Objects uses a card-based metaphor to let users create interactive titles that include sound, movies, bit maps, buttons, animation paths and alphanumeric fields. The environment has its own programming language, Oracle Media Talk, for event scripting.

While the tool is currently available only for 680x0 Macs and Power Macs, titles created with Oracle Media Objects can be played on Windows and Mac machines and through interactive television systems. Interactive television company PowerTV Inc. of Cupertino, Calif., announced that Oracle Media Objects can be used to author content for set-top boxes running the PowerTV OS. A Windows version is slated to ship in the third quarter.

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N2K Multimedia created a cross-platform interactive jazz record catalog on CD with Oracle's multimedia authoring environment, Oracle Media Objects.

Beta user Curtis Brown, technologist at N2K Multimedia Inc. in Brooklyn, N.Y., said that the multimedia tool was well-suited to the interactive jazz catalog N2K created for record label GRP. "[Oracle Media Talk] is a language

See Oracle, Page 18

YARC cards boost 9500 graphics, 3-D

By Donna Raskin

Putting its support — and its acceleration muscle — behind Apple's newest Macintosh, YARC Systems Corp. has three PCI cards for the Power Mac 9500 in the works: a QuickDraw 3D accelerator, a PostScript RIP and a multiprocessing graphics card.

Grabbing opportunities presented by Apple's forthcoming system-level 3-D technology, YARC plans to offer Screamer, a QuickDraw 3D acceleration card. Scheduled for an August Macworld Expo release, Screamer will be based on 3D Labs Inc.'s Glint 300 SX 3-D graphics processing chip and will speed 2-D functions as well. A $995 version will feature frame and depth buffers of 2 Mbytes each. A card with 4-Mbyte frame and depth buffers will be priced at $1,495.

YARC's PCI multiprocessing card, called Hydra, will use either one or two 80-MHz PowerPC 601 chips to speed processor-intensive tasks such as ray tracing and prepress. The card, which is expected to ship this month, will use YARC's scalable multithreaded coprocessor API and support up to six cards per host.

Hydra will be available with 8 to 64 Mbytes of RAM and range in price from $2,995 to $7,995.

Pixar's MacRenderMan rendering application will take advantage of Hydra's multiprocessing. Strata Inc. and other developers are working with YARC so their software can take advantage of the card, YARC said. YARC's own rendering and modeling application, Shade III, will be bundled with Hydra.

The third card in the company's hand is the YARC-RIP, updated for the Power Macintosh 9500. Based on a one-chip Hydra card, the RIP will drive Canon Color Laser copiers, Linotronic imagesetters and the Heidelberg USA GTO-DI digital press.

The YARC-RIP will cost $11,995 and produce 400-by-400-pixel resolution on 8.5-by-11-inch or 11-by-17-inch paper. It is slated to ship this month.

The YARC-RIP will support ColorSync 2.0, as well as Open Prepress Interface. It will ship with 32 Mbytes of RAM.

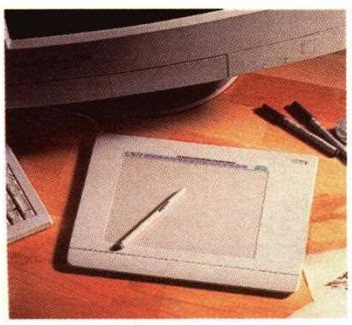
YARC Systems Corp. of Newbury Park, Calif., can be reached at (805) 499-9444 or (800) 275-9272; fax (805) 499-4048. □

Wacom tablets get erasers

By Cate C. Corcoran

Taking some of the pressure off artists to get it right the first time, Wacom Technology Corp. has developed an eraser function for its pressure-sensitive digitizing tablets.

New versions of its graphics tablets, slated to ship this week, will come with Erasing Ultra-Pens that have a blunt, pressure-sensitive end that acts as an eraser. With the same 256 levels of pressure as the writing tip but a spongier feel, the eraser end of the new Wacom pens sends a second signal to the compatible graphics tablets, which can be interpreted by specially configured versions of graphics software.



Wacom's updated line of tablets include a pen with a pressure-sensitive eraser that compatible software recognizes as different from the pen nib.

Macintosh applications that Wacom said will support the erasing tablets as of this week include Adobe Photoshop 3.04, Fractal Design Corp.'s Painter 3.1, FutureWave Software Inc.'s SmartSketch 1.0 and Strata Inc.'s MediaPaint. Other applications that are planned to support the erasing function include Fauve Software Inc.'s xRes and Matisse, HSC Software Corp.'s Live Picture, Macromedia Inc.'s FreeHand, and QuarkXPosure.

Wacom has added new func-

See Wacom, Page 18

FOCUS ON

IMAGING HARDWARE

Imagesetters turn eco-friendly

By Donna Raskin

The green of money and the green of the planet haven't often been able to peacefully coexist. But increasingly in the world of imagesetters, green is in, both financially and environmentally.

A growing group of manufacturers are redesigning their film and imagesetters to eliminate water use and the toxic silver byproduct that has long been an ecological hazard. At this spring's Drupa printing show in Dusseldorf, Germany, Polaroid Corp. and Eastman Kodak Co., among others, added new products to the eco-friendly wave.

"When first-time buyers bring an imagesetter in-house, their worries center around film developing," said Bill Powell, vice president of marketing at LaserMaster Corp. in Eden Prairie, Minn. "They have to order and store chemicals, register their location with the fire department, and insure the site. Finally, companies have to dispose of the waste, which usually includes silver, a toxic chemical." Some states hold companies liable for silver effluence for two years after its disposal. These requirements drive up the real-life cost of an imagesetter.

See Focus On, Page 18

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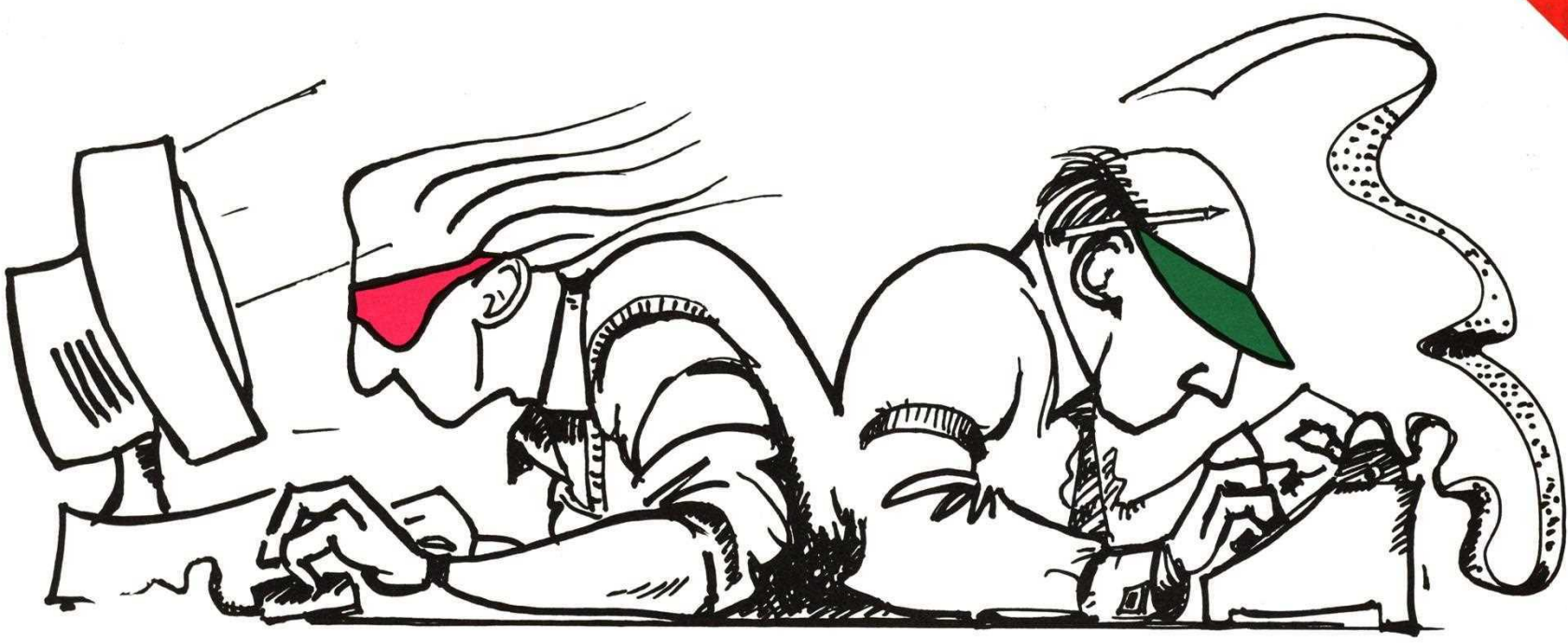

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Parametrics offers thermal printers

By Donna Raskin

General Parametrics Corp. recently enhanced its plain-paper palette with a pair of thermal printers that the company said offer more power for less money.

The Spectra*Star 280 is a plain-paper, letter-size color thermal printer that produces two 600-by-300-dpi pages per minute.

The Spectra*Star 240 costs $2,995, $800 less than the Spectra*Star GLx, which it replaces. It outputs 300 by 300 dpi and comes standard with a 25-MHz Intel 80960CA RISC chip and 6 Mbytes of RAM; by upgrading to 24 Mbytes, users can print at 600 by 300 dpi.

The $3,995 Spectra*Star 280 replaces the $4,995 Spectra*Star GTx and prints 600 by 300 dpi. In place of the Intel 80960CA processor of the earlier model, the company said, the new printer features a 33-MHz Intel 80960CF chip that increases processing speeds by about 20 percent. It comes with 10 Mbytes of RAM, which can be expanded to 32 Mbytes.

The Spectra*Star 240 and 280 are based on the same 2-page-per-minute Sharp engine as Tektronix Inc.'s new Phaser 240, the company said (see story, Page 7). Each outputs color images measuring up to 8.1 by 10 inches to paper or transparencies.

Both include a PostScript Level 2 interpreter and 52 Type 1 fonts. Each comes standard with LocalTalk, serial and parallel interfaces. They also feature built-in color-selection controls for optimizing video output, transparencies and Pantone colors.

In addition, the printers feature Pockettes, proprietary slots that let users plug in a $795 Ethernet cartridge or an $895 120-Mbyte hard disk. The 240 has one slot, and the 280 has two.

The company said that later this year it will release a new cartridge that will let users connect to a color scanner via the Pockette slot. General Parametrics said it expected the option to carry a price tag of less than $200.

General Parametrics Corp. of Berkeley, Calif., is at (510) 524-3950; fax (510) 524-9954. □

Oracle

From Page 16

similar to HyperCard's, which is what we developed on originally. We took our original construction from HyperCard to Oracle Media Objects in a month."

Brown said the cross-platform capabilities of Oracle Media Objects are a big advantage over other tools. "It was easy to bring the title across [to Windows]. With just a few tweaks, a few adjustments, we had a cross-platform title," he said.

Users can download a free 90-day trial copy of Oracle Media Objects or a fully supported copy for $99 from http://www.oracle.com. The tool is also available directly from Oracle by calling (800) 672-2531.

Oracle Corp. of Redwood Shores, Calif., is at (415) 506-7000 or (800) 633-0687. □

Wacom

From Page 16

tionality to its tablet driver, letting the eraser capability work with productivity applications such as spreadsheets and word processors.

At the same time, Wacom is lowering prices. The compact ArtPad II with Erasing UltraPen, available in both serial and ADB versions, is now $179.99, down from $199. The 6-by-8-inch model of the ArtZ II with Erasing UltraPen is $389 for both serial and ADB versions. The 12-by-12-inch serial-only model is now $539.99, reduced from $749. The serial-only 12-by-18-inch and 18-by-25-inch models are now $869.99 and $2,449.99, respectively.

Wacom Technology Corp. of Vancouver, Wash., can be reached at (206) 750-8882; fax (206) 750-8924; wacom@aol.com. □

Adobe melds press apps

By Cate C. Corcoran

Broadening the spread of its electronic page imposition application, Adobe Systems Inc. recently shipped an upgrade to PressWise that includes new color separation and preflight functions.

The $3,995 PressWise creates plate-ready imposed signature forms for web-fed and sheet-fed presses. The functionality of Adobe's $1,495 PrePrint Pro software has been folded into PressWise 2.5. With PrePrint Pro's tools users can perform color separations of images in PressWise signatures. Users can also preview PostScript elements from signatures and run preflight image analyses before printing.

"[Having the two applications together] makes the file transmission very transparent," said beta tester Jim Birkenseer, co-owner of Circus Lithographic Prepress of San Francisco. "Instead of having to launch PrePrint Pro, it just automatically opens your file when you save it in PressWise."

The new version speeds the processing of step-and-repeat jobs with PostScript Level 2 RIPs. PressWise 2.5 sends just one copy of the repeated image to the RIP, where the image is placed many times rather than having to send as many files as there are copies of the image on the signature.

Adobe added many new applications to the list of programs from which PressWise signatures can be created. New input formats include Multi-Ad Services Inc.'s Multi-Ad Creator, Bestinfo Inc.'s SKUgetter and Pricelinks, and PostScript files made from Adobe Acrobat's Portable Document Format.

Compatibility with Adobe's Open Prepress Interface standard lets PressWise 2.5 replace FPO (for position only) low-resolution images with high-resolution images before sending signatures to press.

Adobe Systems Inc. of Seattle can be reached at (206) 685-6736 or (800) 685-6736. □

FOCUS ON

From Page 16

In response to recent emphasis on ecological concerns, Xerox Corp. decided to revamp its 30-year-old product, Dry Microfilm. The company renamed the film, now called Verde (Spanish for "green"), and packaged it as environmentally correct film for imagesetters.

Polaroid, 3M Corp. and Kodak also created dry-image films. The companies worked with hardware vendors such as AutoLogic Inc. and Linotype-Hell Co., whose imagesetters support "green" film.

Green techniques

Fortunately, the quality of imagesetting hasn't suffered in the move to more ecologically sound consumables. For example, Polaroid's Dry Tech imagesetting film, which works with an as-yet-unnamed device by Linotype-Hell, has a Dmin of 0.05 and a Dmax of 4, on par with better wet-process films.

The quality of imagesetting hasn't suffered in the move to more ecologically sound consumables.

During the dry process, selenium, carbon or other electrically charged particles rest between layers of plastic. When the imagesetter applies a pattern of light or heat to the sheets, the particles stick to the "sensitive" layer. What remains when a printer separates the layers is a piece of film to be set on the plate, as well as a throwaway layer of acetate or other plastic, which can serve as a proof of the image.

Kodak's film, however, uses a thermal laser, which writes directly onto the film, leaving no peel-off layer as waste. Kodak's film, which has yet to be named and is based on its Helios X-Ray film, will work with a Dainippon Screen Manufacturing Co. Ltd. imagesetter, the TE-R1070.

Cost matters

With an eye toward reducing toxics, LaserMaster created the PressMate, a chemical-free imagesetter, which sells for $29,955. Powell said his company found that many users are more attracted by PressMate's price than by its green capabilities.

Yet at least one PressMate user was lured by the promise of reducing toxins in her workplace. Margie Smith, owner of Margie's Typesetting of Lenexa, Kan., said: "The environmental aspect played a big part in my decision. I've worked with chemicals for 25 years and couldn't breathe when I went home at night."

With no connection for water in her office, Smith originally began looking to buy a dry-process imagesetter to avoid the cost of using one at a service bureau. Her service-bureau bill was typically about $2,500 per month; now it tops out at $300, she said. "I do brochures for corporations, and it's important for me to see what my output is going to be. I just love the 2,400-dpi color. My presentation pieces look like they'll look when they come off the press, if not better."

In the race to embrace the environment, higher-end manufacturers are also taking a new look at the market. The newspaper USA Today, based in Arlington, Va., is now beta-testing Xerox's Verde film, which can be used with "Verde-enabled" imagesetters from companies such as ECRM Inc., Scitex America Corp. and Ultre, a division of Linotype-Hell.

Ken Kirkhart, vice president of production at USA Today, said a newspaper will be less likely to invest in an environmentally friendly device if it has to go out and buy new equipment. "We serve more than one lord," he said. "We use recycled newsprint and soy inks, but we're still concerned about money. I couldn't do one without the other."

In the end, manufacturers wondering which direction the market will go might look to AutoLogic Inc. for an example of safe product development. The company's APS-EnviroSafe Imaging System machines, which work with 3M's 9800 Dry Image Film and 3M 2243 Dry Image Paper, are modified versions of its wet-process imagesetters.

The APS-7/108C EnviroSafe Imaging System, at $89,000, is seemingly more expensive than its wet-process counterpart, the APS-6/108 Laser Imager, which is $61,500. But when the cost of plumbing, chemicals and water usage are factored in, the company believes the two are directly comparable in price.

"We're sure this market is going to evolve," said Bob Oster, vice president of field operations at AutoLogic in Thousand Oaks, Calif. "And in a sense we're only competing against ourselves." □

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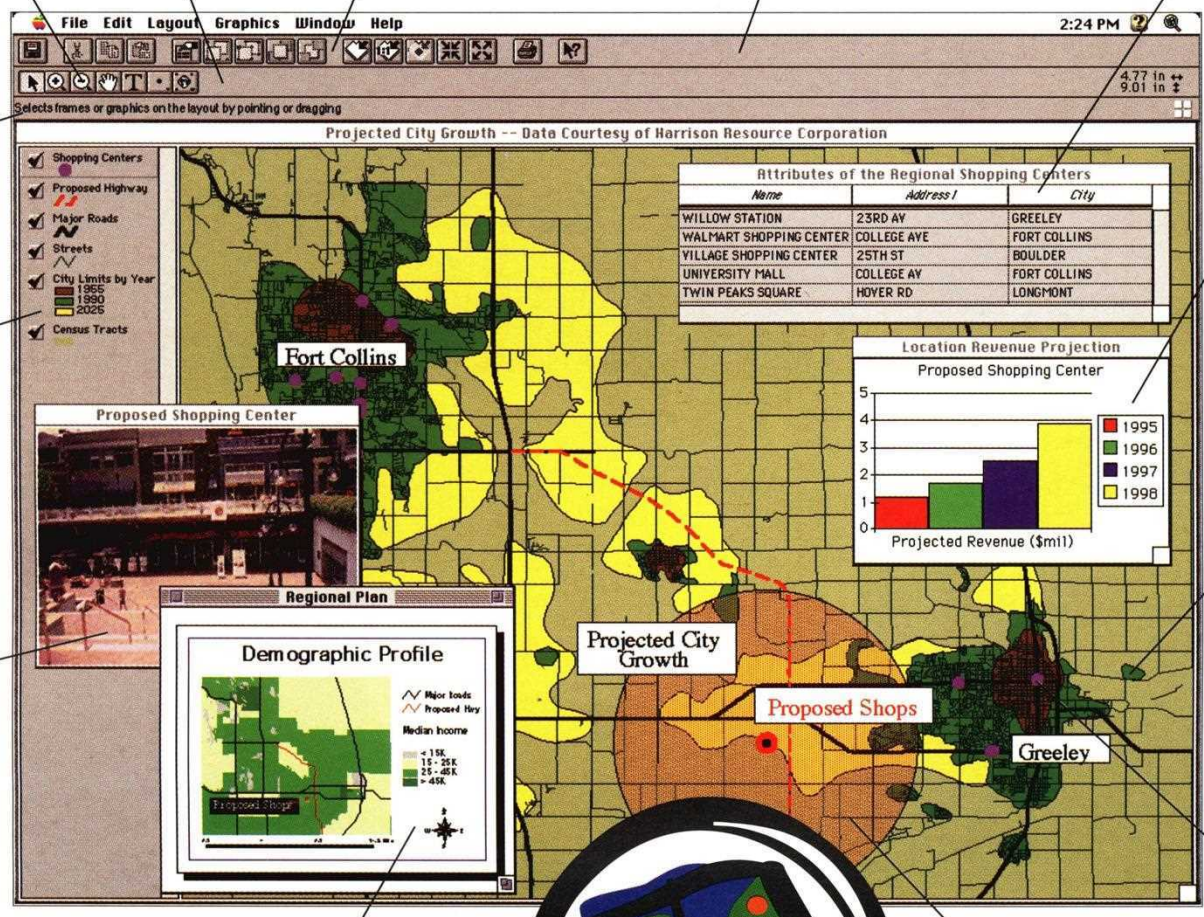

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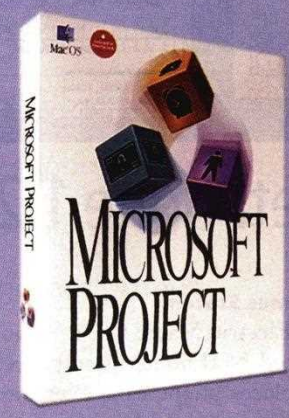

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CAYMAN CUTBACKS

Drained from its run at the remote-access market, Cayman returns to Mac-centric routers.
See Business, Page 30.

Mac confusion on IsoEthernet

Will Apple sell OEM cards?

By Clifford Colby

The emerging networking scheme known as isochronous Ethernet is probably coming to the Mac, but the principal vendors involved aren't quite sure of the details.

National Semiconductor Corp. recently announced it is preparing isochronous Ethernet cards that will be sold by Apple. But while Apple stated earlier that it would offer cards based on the technology, sources said the company is reconsidering its decision.

Isochronous Ethernet joins standard 10-Mbps Ethernet with 6 Mbps of real-time bandwidth divided into 96 independent channels much like ISDN (Integrated Services Digital Network).

According to Richard Brand, National Semiconductor strategic marketing manager for the interactive multimedia business unit, the Santa Clara, Calif.-based company will manufacture the first NuBus cards for isochronous Ethernet this year. The company also recently reaffirmed that Apple would be selling isochronous Ethernet cards for Macs.

However, Apple spokesman John McCreadie said his company is still evaluating isochronous Ethernet. McCreadie said that in general Apple supports all technologies to further videoconferencing, including National's. Apple had previously stated its intent to offer isochronous Ethernet cards (see MacWEEK, March 28, 1994, Page 1).

Sources said the company is now uncertain of the market for the technology, given the emergence of Asynchronous Transfer Mode, and probably will not sell isochronous Ethernet cards. □

Upgrades for dial-in networking

By Nathalie Welch

"Variety" is the watchword in remote-access servers, as three vendors offer different upgrade paths for AppleTalk-based dial-in networking services.

▶ **Novell Inc.** Due to ship this month, Novell's NetWare Connect 2 handles up to 128 ports, twice the number possible with the current version. The upgraded NLM (NetWare Loadable Module) also ties into NetWare 4.1's expanded directory services. Current multilevel security options have been expanded, and Mac and Windows users can now dial out using shared modem pools.

Novell said the update simplifies the configuration process and can duplicate one NetWare Con-

See Remote, Page 24

MacHack compiles coding concerns

By Robert Hess

Southfield, Mich. — Attendees of the annual MacHack Conference have a saying: "Macworld Expo is for marketers, WWDC is for managers, and MacHack is for engineers."

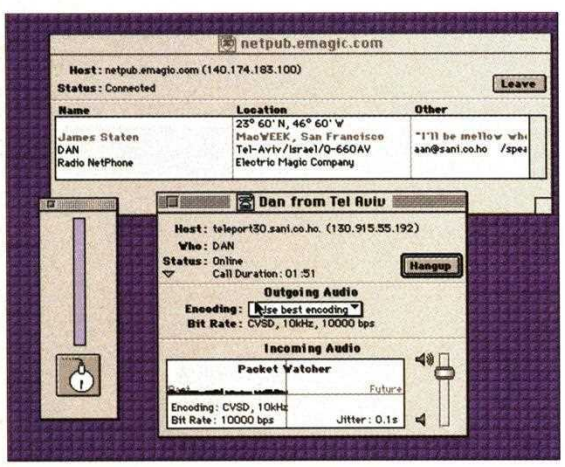
This year, as in the past nine, some 300 of the Mac industry's most respected engineers congregated at MacHack about one month after the Apple Worldwide Developers Conference, or WWDC, to trade software secrets and show off.

But this year the group turned its popular Bash Apple session into a vote for a top 10 list of issues the programmers considered significant. And Peter Christie, Apple vice president of developers tools, committed to addressing them all by the end of August.

The No. 1 concern of the group gathered here last month was developer costs. They said it is generally less expensive to buy a Mac from a discount store than from Apple's direct-to-developer sales program. The programmers suggested that Apple reduce prices or abandon the program. MacHack attendees preferred the former and went so far as to ask that Apple allow the purchase of one of its fastest Macs each year at a "super discount."

Other requests, Nos. 2 and 6 on the MacHack list, centered on the quality of development tools. The group asked for improved debug-

See MacHack, Page 26



NetPhone allows users to place full-duplex audio calls to anyone with the software via the Internet. It now works as a helper application to Netscape Navigator.

NetPhone 1.2 calls the Web

By James Staten

The Electric Magic Co. in June updated NetPhone, its software that places phone calls over the Internet, and released a free server that helps users find one another.

NetPhone creates full-duplex audio sessions over TCP/IP networks such as the Internet (see MacWEEK, April 10, Page 18). The new Version 1.2 allows users of Netscape Navigator to initiate and control calls through the World-Wide Web.

The company said it optimized its audio-compression algorithms

See NetPhone, Page 26

FOCUS ON

INTEROPERABILITY

PCI is opening LAN-card market

By Clifford Colby

After several seasons of calm networking weather, Macintosh users are seeing a new front move in as Digital Equipment Corp. and Rockwell Networking Systems blow into town with Fast Ethernet cards for PCI-based Macs.

"We do not differentiate between the Mac market and the PCI market," said Don Post, senior software engineer for Digital's adapter product group. "The PCI market is inclusive of all systems supporting PCI."

Along with a dual-speed 10/100BASE T board, Digital of Maynard, Mass., is readying PCI network interface cards (NICs) for standard 10-Mbps Ethernet and 100-Mbps Fiber Distributed Data Interface (FDDI) LANs. All are due this summer.

"My expectations are high, especially for our high-end adapters," Post said. "Apple's opening itself up to standard NICs opens up the Mac market to competition. It does nothing but help them and gives us another market to sell into."

Prior to PCI, companies had to build Mac-only NuBus cards along with their Mac-only driver software. Now a company can produce a common PCI card. Because Open Transport is based on standard driver APIs, it's now much easier to write versions of the card-controlling software using similar code on various platforms. "Because of the standard hardware platform, it is now a

See Focus On, Page 24

While 3Com Corp. gobbled up 34 percent of the estimated 18.6 million Ethernet cards sold in 1994, vendors that are now offering Macintosh cards claimed significantly smaller pieces of the LAN pie.

MARKET SHARE	ETHERNET CARD VENDOR
2 percent*	**Apple**
2 percent	**Asanté Technologies Inc.**
Less than 1 percent	**Dayna Communications Inc.**
2 percent	**Digital Equipment Corp.**
Less than 1 percent	**Rockwell Networking Systems**
Less than 1 percent	**Sonic Systems Inc.**

**Does not include built-in Ethernet. Source: International Data Corp.*

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100BASE T now official

By Clifford Colby

The Institute of Electrical & Electronic Engineers gave the final OK in June to IEEE 802.3u, the 100BASE T standard, and IEEE 802.12, a k a 100VG-AnyLAN.

"The standard for 100BASE T is an excellent document," said Howard Frazier, chairman of the IEEE 100BASE T task force and senior software engineer at Sun Microsystems Inc. of Mountain View, Calif.

Frazier said even faster Ethernet is possible: "Once you have a standard for full-duplex Fast Ethernet, you can start looking at 1-Gbps Fast Ethernet over fiber-optic." The IEEE has just begun work on standards for full-duplex.

According to Patricia Thaler, chairwoman of the IEEE 802.12 working group and principal engineer for LAN architecture and standards at Hewlett-Packard Co. in Roseville, Calif., the important issue is support for the standards. "Apple's announcement is part of that," she said. Apple plans to release 100VG-AnyLAN cards this year.

Thaler said her group's next concerns are redundant links and speeds between 400 Mbps and 4 Gbps. "We are investigating ways to do [higher speeds] over twisted-pair but definitely over fiber — no problem doing it over fiber." □

Remote

From Page 22

nect server's configuration onto others. Version 2 can control two, eight or 32 dial-in lines for $495, $1,995 and $5,996, respectively.

▶ **J&L Information Systems.** In early August J&L will ship a free AppleTalk upgrade for its line of ChatAccess remote-access server boxes, which use Type II PCMCIA modems. The upgrade will make the new devices available to Macintosh users. Due this month, the four-port ChatAccess/4PC hardware will cost $2,895, while the eight-port ChatAccess/8PC will be $3,895.

In addition to versions 1.0 and 2.0 of Apple Remote Access Protocol (ARAP), the August upgrade will include a free, unlimited-user license for ChatClient, J&L's proprietary Mac remote-access client.

Currently, the ChatAccess devices implement a range of protocols, including TCP/IP, IPX and NetBEUI. They also include Challenge Handshake Authentication Protocol, Password Authentication Protocol and call-back security features.

▶ **Cabletron Systems Inc.** The MicroMMAC family of stackable Ethernet hubs can now take advantage of the Micro-CS, a seven-port remote-communications module. Developed by Xylogics Inc. of Burlington, Mass., and delivered by Cabletron last month, Micro-CS upgrades start at $2,695. A preconfigured remote-access server and hub unit costs $7,695. The Micro-CS adds seven 115.2-Kbps asynchronous serial ports to MicroMMAC's 12 standard Ethernet ports.

Mac users must call a Micro-CS via ARAP 1.0; this summer Cabletron will add ARAP 2.0 and AppleTalk routing over Point-to-Point Protocol. In addition to AppleTalk, Micro-CS currently offers dial-up links for TCP/IP and IPX. A common security table controls dial-in access for all users and protocols.

Novell Inc. of Provo, Utah, can be reached at (801) 429-7000 or (800) 453-1267.

J&L Information Systems, a division of Astro Sciences Corp., of Chatsworth, Calif., can be reached at (818) 709-1778; fax (818) 882-9134.

Cabletron Systems Inc. of Rochester, N.H., can be reached at (603) 332-9400; fax (603) 337-2211. □

J&L's ChatAccess remote-access servers use either four or eight PCMCIA modems that, when upgraded or replaced, can be hot swapped without interrupting the entire system.

FOCUS ON

From Page 22

question of developing another driver," Post said.

He predicted the increased card competition will be a boon for users. As more vendors enter the Mac market, companies will need to focus on speed, price and support, Post said.

Tom Caldwell, product marketing manager for Rockwell Networking Systems of Santa Barbara, Calif., said he thinks competition will turn up the heat for networking-card vendors and warm users' hearts.

Rockwell began shipping its PCI cards for dual-speed 10/100BASE T and single- and dual-attached FDDI connections in mid-June. Rockwell plans to offer ISDN (Integrated Services Digital Network) PCI cards this fall and a 155-Mbps Asynchronous Transfer Mode card later.

Caldwell said Apple's adoption of PCI will allow organizations to buy one brand of card and use it across platforms by installing the appropriate Macintosh or Intel-standard PC drivers. According to Caldwell, companies that offer multiple drivers will have an advantage. "We have Mac, PC and Unix drivers, and that will put pressure on other companies," he said. Digital said it will also provide drivers for multiple platforms, as will Asanté Technologies Inc. of San Jose, Calif., and Farallon Computing Inc. of Alameda, Calif.

More than just standardization has drawn the experienced LAN vendors to the Mac market. Caldwell said Rockwell was looking for areas where card giants 3Com Corp. and Intel Corp. weren't competing. "The Mac market is a niche where there are not a lot of competitors," he said.

According to International Data Corp. of Framingham, Mass., 3Com commanded 34 percent of the total Ethernet card market in 1994 while Intel claimed 13 percent. Digital delivered 2 percent of the Ethernet cards sold last year — about the same as Mac market leaders Apple and Asanté.

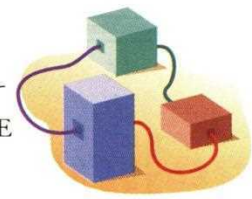
Don Spalinger, vice president of telecommunications research for Dataquest Inc. in San Jose, Calif., said he thinks Apple's adoption of the PCI bus will help the company. "The ability to have players like [Digital and Rockwell] offering cards that are interoperable with other machines is a plus for Apple," he said. "The new, open architecture will make Apple more socially acceptable on the networks.

"Apple has had its own network connectivity," Spalinger said. "People are now seeing an opportunity they didn't see before. The PCI bus is going to make the Mac much more accessible, and that is going to be a major benefit for Apple in the networking world."

Bruce Stancombe, director of product marketing for Asanté, was guarded about Rockwell and Digital's entries into the Mac market. "My expectation is that this will not make much of an impact," he said.

"They have a tough row to hoe in the Mac channels. I think people will buy what they are familiar with." □

HUBS & ROUTERS BEAT



Compatible news. Boulder, Colo.-based Compatible Systems Corp. is shipping its RISC Router 4000S. The device's four Ethernet ports can be used for thick-net or 10BASE T connections; one port also has a thin-net connector. The $3,495 device routes AppleTalk, TCP/IP, IPX and DECnet and uses the Spanning Tree Protocol, which was recently added to the older RISC Router 3400E.

The company also released the $2,995 RISC Router 3400R, which has one Ethernet port, two V.35 serial ports and two RS-232 serial ports. It routes AppleTalk, TCP/IP, IPX and DECnet. Phone (303) 444-9532 or (800) 356-0283; fax (303) 444-9595.

HP update. Hewlett-Packard Co. said that over the next two years it will release workgroup, departmental and backbone switches for 100VG-AnyLAN networks. The rollout starts this month with a $6,495 16-port 10BASE T switch that sports two slots for $2,195 100VG-AnyLAN modules. The Palo Alto, Calif.-based company also plans to ship this month remote-access modules for its AdvanceStack 10BASE T hubs. A two-port Dial-a-LAN module will include two built-in V.34 modems and cost $2,999; a $2,399 four-port module will not include modems. Phone (415) 857-1501 or (800) 533-1333; fax (800) 333-1917.

TigerHub speeds on. Standard Microsystems Corp. of Hauppauge, N.Y., is offering its TigerHub 100 family of Fast Ethernet repeaters. The devices are available with 16 100BASE T ports for $3,995, 12 Fast Ethernet fiber-optic ports for $7,995 and 15 100BASE T ports with a 10BASE T fiber-optic port for $4,995. Phone (516) 435-6000 or (800) 762-4968; fax (516) 273-2136.

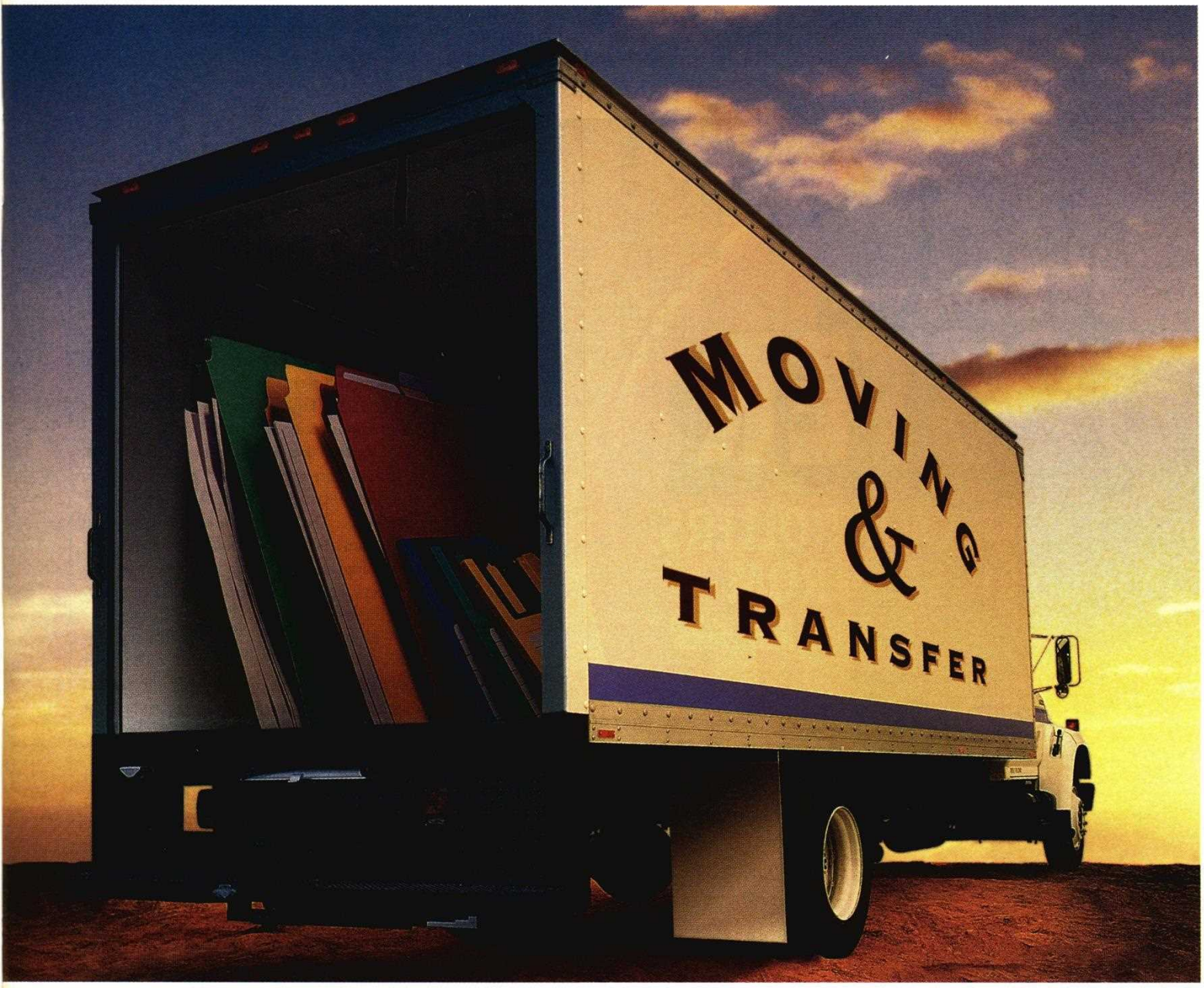
Sonic hub. Sonic Systems Inc. released in June an unmanaged standard Ethernet hub, the StarBase T/16. The $429 device from the Sunnyvale, Calif., company comes with 16 10BASE T ports, one thin-net port and one thick-net port. Phone (408) 736-1900; fax (408) 736-7228; sales@sonicsys.com.

Asanté drops prices. San Jose, Calif.-based Asanté Technologies Inc. lowered the prices on several of its products. The company's eight-port 10BASE T 10T Hub/8 is now $192, down from $249, and its FriendlyNet transceivers for Apple AUI (attachment unit interface) ports are $59, down from $69. Phone (408) 435-8388 or (800) 662-9686; fax (408) 432-7511; sales@asante.com.

In other news. In June, **NetSpan Corp.** of Richardson, Texas, acquired the PShooter 12- and 24-port LocalTalk hubs from now-defunct **PCon Inc.** NetSpan will rename the PShooters the MultiStar LT hubs. ... **Farallon Computing Inc.** of Alameda, Calif., in May released a new version of Timbuktu Pro for Windows. ... In another acquisition, **Bay Networks Inc.** of Santa Clara, Calif., bought **Centillion Networks Inc.** of Mountain View, Calif., a maker of token-ring and Asynchronous Transfer Mode switches.

— By Clifford Colby

Just Because You're Moving To A New Word Processor Doesn't Mean You Have To Leave Your Files Behind.



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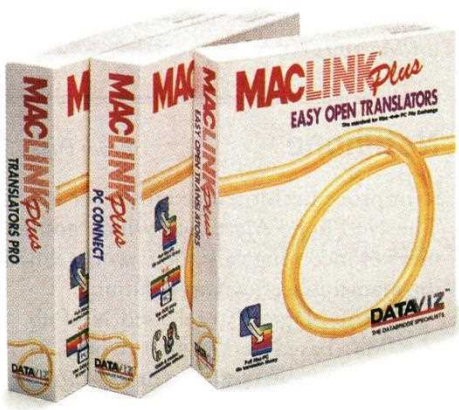

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Interactive chat lines for LANs

By James Staten

Electronic Learning Systems Inc. this month brought out a more direct alternative to e-mail. The ChatNet system, which is free for a three-user version, allows peer-to-peer text-based conversations and file transfer over EtherTalk or LocalTalk LANs.

Users can participate in public or private conferences, send invitations to other users, ignore certain members' comments, and send private messages during public confabs. Managers can control which users access the system or restrict participation by zone; they can also maintain a database of words to be censored from chat sessions and monitor discussions without revealing their presence. The system supports Apple's text-to-speech technology and also displays discussions using multiple fonts, sizes and colors.

The company said that in September it will release a $19.95 version that connects to Internet Relay Chat conversations and applies the same configuration controls.

Licenses for 10, 50 and 250 users are $99, $249 and $499, respectively. The free three-user version can be found on the Internet at ftp://info-mac@sumex-aim.stanford.edu or on one of its many mirror sites.

Electronic Learning Systems Inc. of Gainesville, Fla., can be reached at (904) 375-0558 or (800) 443-7971; fax (904) 375-5679; elstech@aol.com. □

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MacHack

From Page 22

gers and compilers and stronger support for third-party vendors of those tools. The group was also concerned about the lack of regular, solid communication among developers and tools vendors.

MacHack voters questioned the technical support Apple gives them. The programmers said they need better documentation and help from the company. Sample code, an FTP server on the Internet, less expensive eWorld access and all-inclusive pricing on products were requested in the third, fifth and seventh items. The plea from the programmers: "Talk with us. Outdo Microsoft in its contact with Macintosh developers."

In the fourth item, attendees said Apple is not doing an adequate job promoting key technologies, such as PowerTalk and QuickDraw GX. They asked the company to build development frameworks incorporating the technologies, to improve its support for developers who adopt them and to better position these OS add-ons in the marketplace.

A new feature in the Mac OS was requested in No. 8. Holding down the Shift key at start-up currently loads some system extensions, such as networking drivers, but not others, such as CD-ROM drivers or Apple's debugger. As a result, it is not possible to start up a Mac extension-free and still mount a CD-ROM, such as the System 7.5 installer disc. The group asked that Apple expand the basic set of extensions loaded when the Shift key is held down.

Ninth on the list was reduction in the number of Apple extensions used for new technologies: "One feature, one file," MacHack said.

Finally, attendees asked Apple to "give us the ammo that we need to fight for the Mac," such as "easily found and used numbers and arguments for making the case for Macintosh development." □

NetPhone

From Page 22

to improve performance on slower Macs. The NetPhone Alert tool, which notifies users of incoming calls, now works when the main application is not running.

Electric Magic also released NetPub, a free Mac-based server that works as a repository where NetPhone users can congregate to initiate calls to one another.

NetPhone is available over the Internet for $59, down from $79. It is $65 when purchased through traditional means. Five- and 10-user packs via the Internet are $249 and $489, respectively; they cost $300 and $545 via postal mail.

The Electric Magic Co. of San Francisco can be reached at (415) 759-4100; fax (415) 566-6615; info@emagic.com; http://www.emagic.com. □

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Andrew Lewis
CEO and President of DayStar Digital, Inc.

Charles W. Berger
Chairman and CEO of Radius, Inc.

Stephen Kahng
CEO and President of Power Computing

MacWEEK 200 Survey Results

Anita Malnig, Executive Editor/Features presents findings from the 7th Annual MacWEEK 200 Survey. This study focuses on the installation of Macintosh technology in the largest and most heavily invested Macintosh sites.

Keynote Address: Apple's Mac OS Licensing Strategy

Daniel L. Eilers, Senior V.P., Worldwide Marketing and Customer Solutions, Apple Computer, Inc.
Apple's licensing strategy is central to the company's plan to grow its installed base and increase the reach of the Mac OS, worldwide. Find out first hand what to expect from Apple during the year of the clone. Mr. Eilers will outline the company's plans and strategic partnerships with Mac compatible manufacturers.

Clone Summit: The Next Generation of Macintosh

Join the clone developers who are creating a whole new generation of Macintosh for an unprecedented discussion of the niches and needs addressed by these product.
Panel members include: Andrew Lewis, CEO and President of DayStar Digital, Inc.; Charles W. Berger, Chairman and CEO of Radius, Inc.; and Stephen Kahng, CEO and President of Power Computing.
Panel host: Henry Norr, Editor Emeritus of MacWEEK

Don't miss this exciting line-up of key industry players as the "Year of the Clone" unfolds. Space is limited to the first 200 attendees to RSVP.

A picture is worth
But for some reason, Hew

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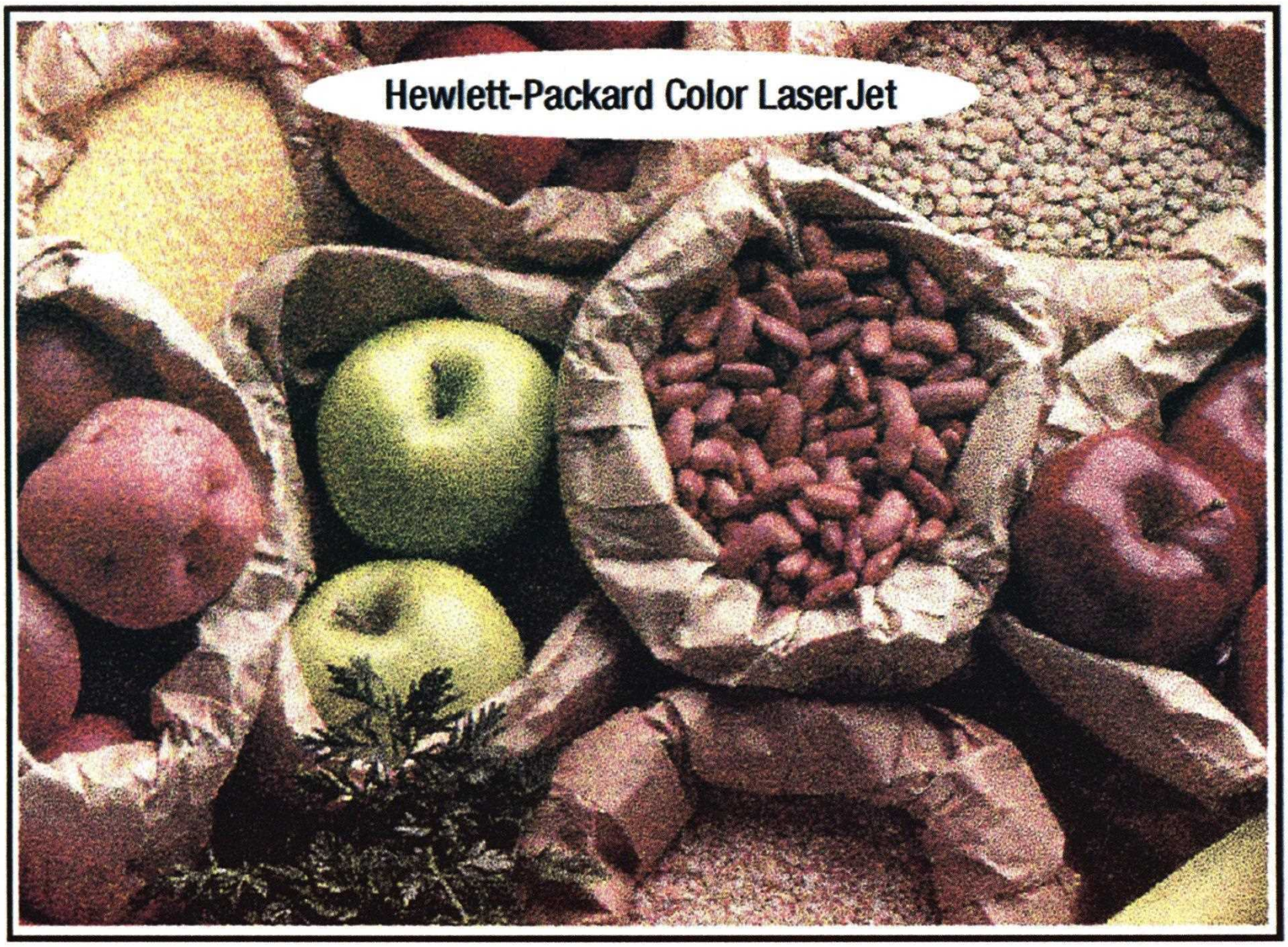

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STOLEN IN AMERICA

The United States led in software piracy in 1994, with $2.88 billion in losses.

— Business Software Alliance

Cayman back to router roots

By Jon Swartz

Cayman Systems Inc. is pinning its future financial hopes on a past product strategy. But time may be running out for the internetworking company.

The Woburn, Mass.-based company's work force, which numbered nearly 100 people in 1993, is down to 15. Its CEO, Brad Noblet, resigned in May. And a 25-person enterprise remote-access division — the focus of Cayman's business for nine months — was disbanded in May.

Enter Cayman Chairman Ted Stabler, who was previously president and CEO of the 8-year-old private company, and director Bruce Parker, who succeeded Noblet. Their goal: to rebuild Cayman by returning it to its roots in the workgroup internetworking market.

"We aren't here to squeeze what we can out of the company and discard it," Stabler said. "We want to build multiprotocol workgroup solutions for small businesses with internetworking needs." He added that Cayman wants to maintain a strong Apple focus, especially among design and multimedia users.

- Founded: **1987**
- Headquarters: **Woburn, Mass.**
- CEO: **Bruce Parker**
- Employees: **15**
- Products: **GatorBox, i-series, GatorLink**
- Annual sales: **$5-$10 million**

That means abandoning Cayman's troubled foray into landing Fortune 500 accounts. Instead, Stabler said, the company will develop a core of products: GatorBox, a line of routers, hubs and remote-access servers; i-series, Ethernet-to-Ethernet routers and hub routers; and GatorLink, Ethernet-based remote-access servers for AppleTalk.

The radical shift in strategy

See Cayman, Page 32

NEWS ANALYSIS

Adobe, Frame outline future

Merged company to cross platforms

By Kirsten L. Parkinson

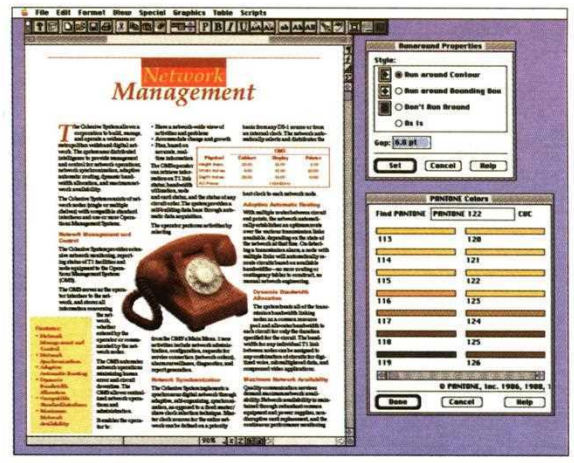
The reviews are in, and Adobe Systems Inc.'s acquisition of Frame Technology Corp. gets a thumbs up from company officials and analysts alike.

The $500 million deal, which Mountain View, Calif.-based Adobe announced in June (see MacWEEK, June 26, Page 4), is expected to be completed in late September. Adobe CEO John Warnock said that there will be some layoffs but declined to say how many.

One known loss will be Frame CEO George Klaus, who will depart once the acquisition is complete. "Frankly, I'm better off being the CEO I am rather than working for someone else," Klaus said.

Warnock and Klaus said the addition of FrameMaker, aimed at users publishing large technical documents, to Adobe's product line will round out the company's authoring solutions.

"We really share the same vision for the electronic document," Klaus said. "This is an opportunity to bring two companies together that allow the customer to attack all sides of the electronic document."



With its acquisition of Frame, Adobe intends to fold FrameMaker (left), a high-end DTP package for technical users, into its product arsenal.

Analysts said the companies will benefit from each other's strengths on different platforms. Frame's products, which have traditionally been weak in the Mac and Windows markets, should gain from Adobe's powerful presence in those areas.

Likewise, "Frame's strength has been on the Unix side," said Stephan Somogyi, senior editor at Digital Media, an industry newsletter based in San Francisco. "What Adobe's getting is a lot of good experience in solving cross-platform issues."

San Jose, Calif.-based Frame, which had reportedly sought a buyer for two years, can also take advantage of Adobe's larger development resources and international sales channels, said Joan-Carol Brigham, senior staff consultant for International Data Corp. of Framingham, Mass.

"Frame has a document-management product with its acquisition of Curo [Document Manager], but they haven't really been able to bring it to market very well," Brigham said.

Analysts were divided on whether Adobe will try to integrate Frame's technology into its product line, particularly Page-

See Adobe, Page 32

Investors sold on Apple stock

By Jon Swartz

Wall Street is now bullish on Apple stock after the bearish summer of 1994.

In July 1994, the price of Apple stock hovered around $26 per share amid concerns that the company's margins were eroding in a personal computer price war and that Power Mac sales were sluggish, financial analysts said.

In late June, the stock closed at $47.25, up 82 percent from a year ago, and was approaching its 52-week high of $50.13.

The stock, in fact, has steadily increased since January, when it traded in the mid-$30 range. The stock has historically traded for $25 to $60 per share.

Apple stock in '95

Analysts said Apple's reversal of fortune can be best summed up in three words: Power Mac sales. Through March 31, the company had shipped more than 1.4 million units.

"The general health of the PC industry is good and Power Macs have performed particularly well," said Michael Murphy, editor of the California Technology Stock Letter in Half Moon Bay, Calif. He said recent speculation about potential mergers with IBM Corp., AT&T Corp. and Oracle Corp. also "booted up" Apple's stock.

Apple USA President Jim Buckley told MacWEEK he expects the company's good fortunes to continue. He said the addition of new Power Macs and the Color LaserWriter 12/600 PS to Apple's product line will boost sales for the next few quarters.

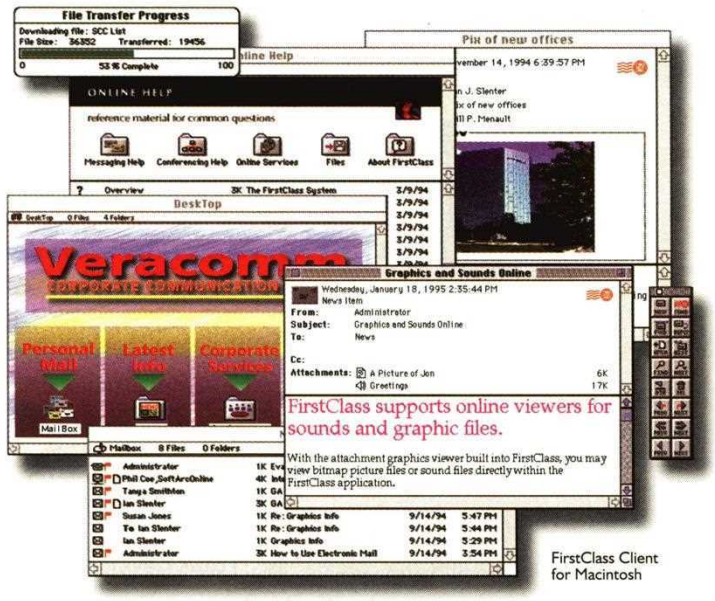
Apple is scheduled to announce its third-quarter results July 20. □

MacWEEK index
IT'S AN ON-LINE WORLD

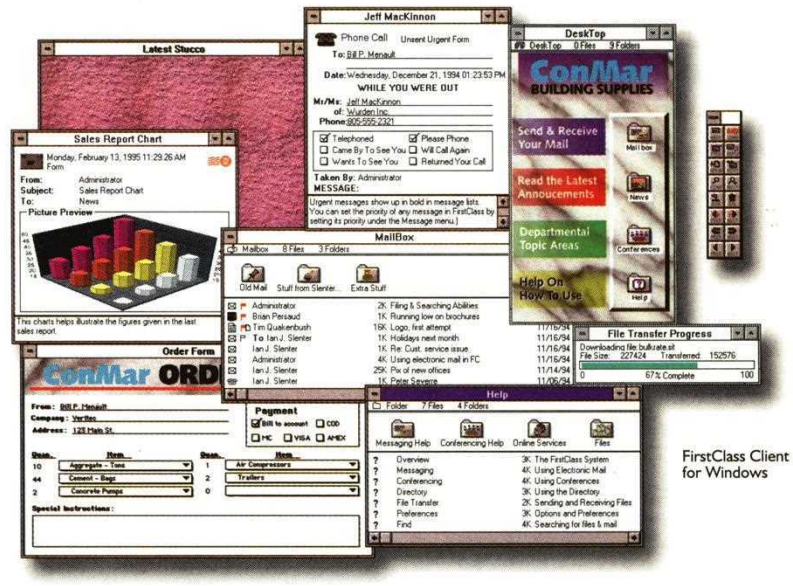
Worldwide on-line subscriptions jumped by nearly 1 million in the first three months of 1995, according to Simba Information Inc. The Wilton, Conn.-based research company attributed most of the growth to a 47 percent increase in America Online subscribers. About 70 percent of on-line users are in the United States, according to Simba.

SERVICE	THROUGH 12/31/94	THROUGH 3/31/95
CompuServe	2,660,000	2,800,000
America Online	1,500,000	2,200,000
Prodigy Services	1,200,000	1,300,000
GEnie	100,000	100,000
eWorld	65,000	75,000
Others	643,000	679,000
Total	6,168,000	7,154,000

Source: Simba Information Inc.



FirstClass Client for Macintosh



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FirstClass®

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FirstClass integrates full fledged electronic mail with built-in workgroup discussion databases. Communicate elegantly with individuals or groups with the world's easiest, cross-platform graphical mail interface.

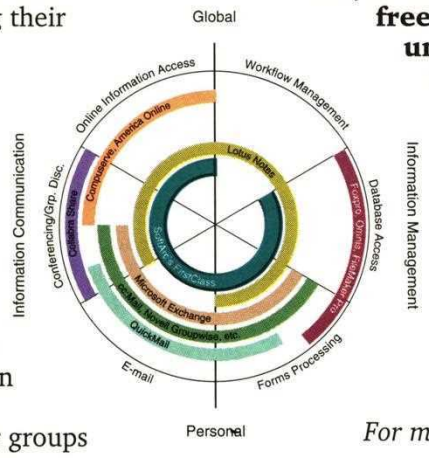
Administer multi-server networks from a single location. Synchronize directories between sites. Add powerful Internet gateways for instant global communication. Offer news feeds or collaborative areas for workgroups. Connect with other mail systems and technologies, including faxes and PDAs.

1995 MacLife Japan Grand Prize
1994 MacUser Best New Communication Product Finalist
1994 Datateknik Sweden Editor's Choice Networking Software
1994 MacUser UK Editor's Choice Networking Software
1993 MacUser Best New Communication Product
1993 BYTE Award of Merit
1993 Macworld Germany E-Mail Product of The Year

FirstClass also offers access to enterprise databases, interface customization and outstanding remote connectivity ... all for the price of traditional e-mail.

Finally, even after three million users sold, SoftArc continues to offer **free technical support** and **unlimited free upgrades** to registered owners of FirstClass.

Discover why more and more organizations like yours have chosen FirstClass — the leading Mac-based communication solution.



Traditional e-mail doesn't address group communication. Conferencing and groupware systems lack real e-mail. FirstClass offers both ... and more.

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- Mail and conference replication to other FirstClass servers for distributed mail and group communication networks
- Messages with multiple fonts, styles and colors in personal mail and conferences; unlimited file attachments in messages
- Background searching of folders, conferences or whole of system
- Multiplatform support optional — without costly network file servers or routers
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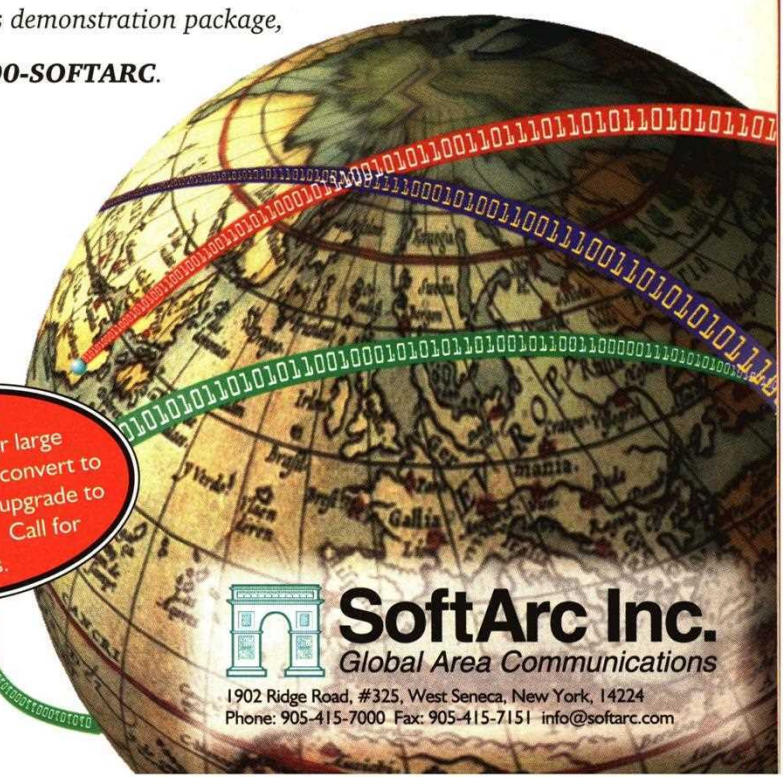

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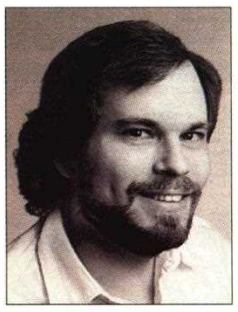
DEALER'S CORNER SCOTT HARRIS

Joint OS from Apple, IBM would challenge Microsoft



IBM Corp.'s recent announcement of its intention to offer the Mac OS as an option on future PowerPC-based systems captured press attention but may have seemed like old news to resellers. Most, after all, thought the original PowerPC announcements years ago meant Apple and IBM would build machines capable of running either's OS.

Birds of a feather

But Apple's Mac OS and IBM's OS/2 are facing essentially the same problem. No one expects either to overtake Microsoft Corp.'s OS market leadership in the foreseeable future. In fact, many question whether they can even survive in the face of Windows' momentum, despite widely acknowledged superiorities: the Mac OS in ease of use, elegance and hardware-software integration; OS/2 in memory management and multitasking.

But what if Apple and IBM merged the Mac OS and OS/2? Instead of dividing non-Microsoft-committed buyers (and developers) between them, the companies could offer a unified alternative platform, with a greater chance of long-term success than either alone. It just might even provide a real challenge to Microsoft's dominance.

IBM would bring to such a union much of what Apple needs most: memory protection, preemptive multitasking, a strong foothold into corporate America and greater market credibility. As it stands, Apple is finding the first pair years away and the latter two an even greater challenge. IBM would also benefit. To put it plainly, this plan would provide the PowerPC-based OS/2 what it needs most — a reason to exist.

Mac OS/2?

A key selling point for Intel-based OS/2 — for most users the only one, since so few OS/2-native applications are available — is the robust multitasking environment it offers for Windows programs. But Windows programs run as well as they do only because they use genuine Microsoft Windows code, which is x86-specific. OS/2 for PowerPC, which will depend on Soft-Windows-like emulation, is likely to suffer slow Windows performance. And if it can't be positioned as a superior platform for Windows applications, its market may be largely limited to vertical applications; as a result, it may have even less market impact in the PowerPC arena than it has in the Intel world.

IBM, for its part, could benefit from Apple's expertise in making the OS/2 graphical user interface more straightforward. Perhaps users would be able to customize the interface and make it very Mac-like or not, depending on their preferences.

If it could be done, it would benefit Apple, IBM, dealers and users. And that would be real news. □

Scott Harris, owner of The Media Room Inc. in Mt. Kisco, N.Y., can be reached on CompuServe at 73717,1162.

Cayman

From Page 30

appears to have paid off. In the two months since Stabler and Parker took over, Cayman has turned a profit. The company is also in the process of beefing up telephone technical support; users have complained on-line about Cayman's unresponsiveness to product queries.

Cayman was a leader in the LocalTalk-to-Ethernet router market, which peaked in the early 1990s. Buoyed by a lucrative contract with the Boeing Co. and emboldened by a crack engineering team, the company was profitable and made a name for itself with the GatorBox line.

But the market began to top out in 1993 with the arrival of Ethernet-to-Ethernet router vendors such as Cisco Systems Inc., 3Com Corp. and Bay Networks Inc. and the departure of smaller, independent developers such as Shiva Corp., Farallon Computing Inc. and Compatible Systems Corp.

"There were 15 vendors at Mactivity in '91, six in '92 and less than six in '93," said Paul Kent, president of Mactivity Inc., a Los Gatos, Calif.-based organizer of Mac networking conferences. "AppleTalk routing is a limited field. To their credit, Shiva and Compatible foresaw 800-pound gorillas like Cisco entering the market, so they shifted to other product areas."

While Shiva of Burlington, Mass., and Compatible Systems of Boulder, Colo., made successful transitions to mobile remote-access routers and Internet Protocol routers, respectively, Cayman took a gamble on the enterprise remote-access market. It didn't pan out, Stabler said.

"The company was in over its head," he acknowledged. "There was not enough funding."

Matt McConnell, president of Compatible Systems, said the unpredictability of the Mac router market has hurt Cayman but could help it as well. "As quickly as things change, you can never count anyone out," he said. □

Adobe

From Page 30

Maker. They said large differences in core code may hamper integration.

Warnock said the next version of FrameMaker will incorporate interface changes to make it consistent with other Adobe products. The company has not determined what longer-term changes in the products might take place, he said.

As for the competition, observers said that Adobe will present a major challenge to Waltham, Mass.-based Interleaf Inc., Frame's primary competition. On the other hand, Quark Inc., maker of QuarkXPress, will not be immediately affected by the Frame acquisition, analysts said.

In the longer term, "It's a little early to determine how Adobe's use of [FrameMaker] might affect us," said a spokesman for Denver-based Quark.

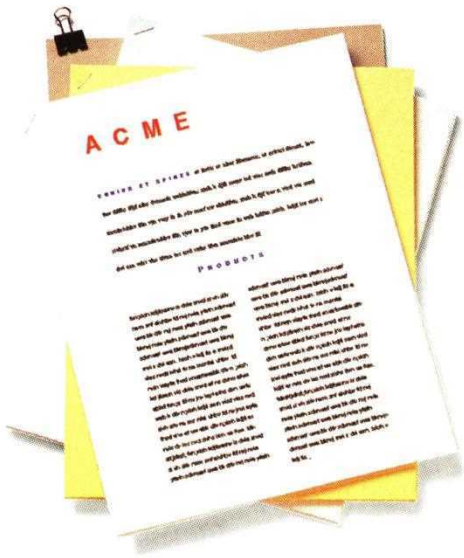
Interleaf could not be reached for comment. □

OFF THE WIRE

- **Netscape girds for August IPO**
- **Big Blue gets green light on Lotus**
- **Court approves Microsoft settlement**

Netscape Communications Corp. last week announced that it plans to issue 3.5 million shares of stock in mid-August at a price that has not yet been determined. The Mountain View, Calif.-based company, which employs 200, is a leading supplier of software for the World-Wide Web. ... **IBM Corp.'s** proposed $3.52 billion acquisition of Cambridge, Mass.-based **Lotus Development Corp.** cleared a federal antitrust hurdle in June when the Federal Trade Commission let the required waiting period expire without action. IBM is awaiting Lotus shareholder approval. ... A federal appeals court in June approved the government's antitrust settlement with **Microsoft Corp.** over software discounting and disqualified the controversial judge who had originally rejected it. The three-judge appellate panel removed U.S. District Judge Stanley Sporkin from the case, finding he had overstepped his authority in ruling against the settlement in February. ... At the same time, Microsoft has filed a lawsuit against the U.S. Justice Department, according to reports in the Washington Post, alleging that the quantity of information subpoenaed concerning the upcoming Microsoft Network, as well as the aggressive deadlines, were unreasonable. A new schedule is being proposed. ... Maurice Cox stepped down as CEO at **CompuServe Inc.** of Columbus, Ohio, in June. He was replaced by Robert Massey. ... **Apertus Technologies Inc.** of Eden Prairie, Minn., said it plans to acquire **BlueLine Software Inc.**, a Minneapolis-based developer of network-management tools. Terms of the deal were not disclosed. ... **Blyth Holdings Inc.** in June laid off 43 employees — one-quarter of its work force — as part of a restructuring to save the Foster City, Calif.-based developer of client-server applications some $1.7 million per quarter in operational costs. ... **Oracle Corp.** of Redwood Shores, Calif., said fiscal 1995 sales shot up 49 percent, to $2.97 billion from $2 billion in 1994. Profits for the 12-month period ended May 31 were $442 million, up 56 percent from $284 million a year ago. ... **Tektronix Inc.** reported improved fiscal 1995 results. Sales for the Wilsonville, Ore., company increased 11 percent, to $1.47 billion from $1.32 billion in 1994. Profits, meanwhile, improved 33 percent, to $81.3 million from $60.9 million a year ago. ... Worldwide demand for memory chips is expected to grow by 40 percent this year, according to **Dataquest Inc.** The San Jose, Calif.-based research company said it expects 1995 sales of memory chips, including dynamic RAM, to improve to $45 billion from $32.4 billion in 1994. ... Finally, **Apple** and the **Public Broadcasting Service** of Washington, D.C., announced in late June that Apple will contribute a $1.5 million grant to PTV, a service that produces educational TV spots for children and community-training announcements for parents and child-care providers. □

A YEAR IN THE LIFE OF A FRAMEMAKER DOCUMENT.

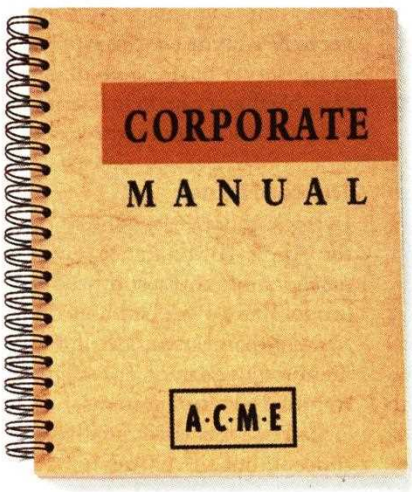


JAN 14 *Acme Development Company's marketing department worked as a team to create its first marketing plan. Everyone contributed, each using FrameMaker's text, graphics, layout, formatting, and long document features. The end result was the best marketing plan in Acme history.*

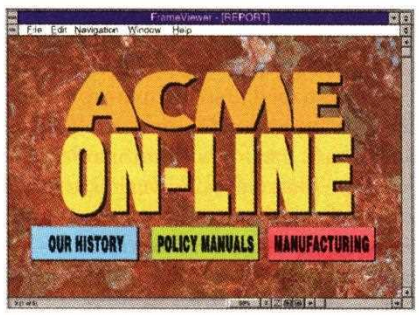
SEP 27 *Oops! Fido just made a meal out of some essential drawings. Fortunately, FrameMaker can import directly from the architect's workstation, since it supports popular CAD, graphic, and word processing file formats. It even runs on platforms like Macintosh, UNIX, and Windows.*

MAR 28 *Business was booming, so Acme included its skyrocketing sales figures in the marketing plan. FrameMaker imported a variety of graphics, and flowed text neatly around them with the help of the new auto text wrap feature. It even has unsurpassed table editing for multipage tables.*

DEC 3 *Soon Acme had its very own Web site to help disseminate company information to employees and customers all over the world. So naturally, Acme made extensive use of FrameMaker's new HTML export capabilities. Now all its material could be published directly to the Internet.*



MAY 10 *Acme hit the bigtime and went public, becoming Acme Corporation. To make sure all the IPO documentation was consistent, FrameMaker's import text and graphics by reference feature was used extensively for retrieval and update of boilerplate information created in FrameMaker or other applications.*



JUL 1 *Suddenly Acme had a need to communicate online–to save time, paper, and even a few trees. So they used FrameViewer™ for instant online distribution with no additional post-processing or conversion required. It even supports FrameMaker's automatically generated hypertext links.*

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BPA INTERNATIONAL

Not ready for review

If the recent First Look at the beta version of SoftWindows 2.0 generally reflects its ultimate performance, you are all excused for yawning. And you might as well stretch your arms and walk around the room, because if Insignia Solutions Inc.'s emulation software runs Windows programs in Enhanced Mode at just beyond the speed of a 25-MHz 386, you'll be bored silly.

As noted in the First Look (see MacWEEK, June 26, Page 1), it is a technical achievement to emulate all of the transistors in Intel Corp.'s 486. But not every technical achievement has a practical application for users.

Let's face it: Performance, not clever coding, is what counts to users. The argument that SoftWindows 2.0's speed "should be acceptable for most business software" fails in the real world. Most business applications that are not already native on the Mac are likely to be custom or vertical applications. Many of them will be processor-intensive. If Mac users want these applications to perform decently, they will need a hardware coprocessor or a second machine. SoftWindows just won't do.

If the customer-shipped version matches the current beta incarnation, we are not convinced that there is a reason to pay $499 for SoftWindows 2.0 and another $475 for the necessary 16 Mbytes of memory to get a slight edge over a 6-year-old Intel-standard machine.

In fact, you could buy a used Deskpro 50-MHz 486 from Compaq Computer Corp. for less than $850, and you would also get a color monitor, some mass storage and a few applications. You might even get a sound card, something SoftWindows 2.0 doesn't support. Of course, you'd need a little more desk space, but with the money you would be saving, you could afford it.

SoftWindows 2.0 will be a disappointment for those who want speed. We're certain that as the product matures, its performance will improve. Until then it is a solution for those who need only occasional use of a Windows application or sporadic database queries. But for most buyers, an extra computer or a coprocessor option remains the intelligent choice. □

THE SECOND DECADE HENRY NORR

Apple-IBM alliance at 4 bordering on stagnation

This week marks the fourth anniversary of the original announcement of Apple's alliance with IBM Corp., which means it's time for another review of the state of the partnership.

Some wheat, lots of chaff

A year ago I wrote, "Of the four initiatives the deal encompassed, so far only one — the PowerPC — has made any real difference to Mac users." In that respect, nothing has changed: While Taligent Inc. and Kaleida Labs Inc. have finally managed to ship developers kits, end users have yet to see a product based on either one, and since both are now thoroughly cross-platform, it's not clear what competitive advantage Apple will derive from them even if they succeed. (It's particularly distressing to consider how much money and engineering talent Apple has poured into these joint ventures while engineers working on the platform-critical Copland project are complaining of desperate resource shortages.)

Meanwhile, the PowerOpen concept — a high-end OS with AIX foundations and the Mac look, feel and application base — appears to have disappeared without a trace. Granted, you could probably count on the fingers of one hand — OK, maybe two hands — the number of customers mourning its passing, but Microsoft Corp. is busily demonstrating the very real benefits of a dual-OS strategy: Windows NT has allowed it to make significant inroads in the server market; enabled it to establish a beachhead on RISC; and, most important of all, provided an easy answer to give to corporate managers disappointed in Windows 95.

Apple still mumbles occasionally about AIX-based servers, but at this point such talk serves mostly to muddy the company's message to customers already confused about the roles of AppleShare and Novell NetWare in Apple's strategic vision; I have yet to be convinced that Apple can succeed in the server business at all, but it's inconceivable that it can do so if it continues to divide its efforts among three network OSes.

The core issues

In last summer's assessment of the state of the Apple-IBM alliance, I wrote that the partnership "could still produce the revolution many of us had hoped for — if the two companies would come to an agreement to put System 7 on Big Blue's forthcoming PowerPC systems."

Last month IBM finally endorsed the concept, but the parties are still haggling about the details, and implementation will probably have to wait for Copland and the Common Hardware Reference Platform. Worst of all, by delaying so long and making such a halfhearted announcement — all to avoid offense to internal factions who still harbor fantasies of world conquest under the banner of OS/2 — IBM has managed to strip this historic development of most of the marketing value it could have had for both companies.

That leaves PowerPC, the one element of the alliance that seemed to be living up to expectations. More on that — not all of it is rosy — in an upcoming column. □

Henry Norr, editor emeritus of MacWEEK, welcomes feedback in the MacWEEK forums on CompuServe or eWorld or at hnorr@ftp.macweek.ziff.com.

LETTERS

A crush on Windows 95?

Henry Norr, have you considered how your words sound outside the cavity of your own head (MacWEEK, June 19, Page 24)? I mean, you sounded like a schoolgirl giggling over the length and girth of Microsoft's interface. I don't want everything in the Mac OS! I want it to do what it does in an even more unobtrusive way. What you overlook, in your effort to see to it that the Mac strokes the IS ego, is that the Mac's appeal has always been its provenance. Macs got into corporations without all the IS goodies of which you spoke. And the Lockheed decision to replace all its Macs with Wintels is just dumb. Period. Don't transform things like it into the long-standing shortcoming of the Mac. Macs are in corporations because of users like me, vocal people who have been enamored by the seminal way the Mac does its stuff. If you pit this basic advantage against the hit parade of Windows 95, then you slight the very core of the Mac.

The real-world IS thinkers realize that the increased level of complexity in Windows 95 will cause them to pause before biting the big install bullet. But then again, it *is* going to be a great jobs program. Now I get it. You were just trying to illustrate how IS managers can grow their departments. Man, you're a genius!

Todd Wheeler
Graphic designer
New Bremen, Ohio

Apple's delusionary quests

Robert Hess' article and Andrew Gore's commentary (MacWEEK, June 19, pages 1 and 3) about the Pippin system make me wonder what is really going on with Apple management. Is anybody home? Or are they all blabbering among themselves about "the next wave"?

The fact is that Pippin won't make it to the market, and if it does it will be a total embarrassment. The road is littered with "edutainment" machines that sounded brainy but are only game machines in disguise (Commodore CDTV and Philips CD-I, to name two).

The market is in games, and up against six other 32-bit platforms Pippin doesn't stand a chance. Projects like Pippin, AppleCD and Newton are nice marketing ideas but with little reality to back them up (at this time).

Apple needs to focus on the things it does well, and most importantly, it needs common-sense management that understands this. So far, management only appears interested in delusionary quests.

Chris McAlister
Knoxville, Tenn.

Pointing to pre-press

As the director of MIS at a mid-size advertising agency, I thoroughly enjoyed reading your article titled "Simultaneous screaming" (see MacWEEK, June 19, Page 30).

Everything I read about the new Power Mac 9500 points in the direction of the prepress market. I can tell you that in our prepress department we have three Quadra 950s, and we did *not* upgrade to the Power Mac 8100 for the reasons you pointed out, primarily that the 8100 is a transitional machine. The idea of third-party PCI cards is just too exciting for my words to convey.

The only sticking point I can see is the SIMM/DIMM (dual in-line memory module) issue. I understand that Newer Technology will introduce the DIMM Tree. It promises no performance punishments, but that remains to be seen.

Finally, your last paragraph is well taken. Apple must start working cooperatively with the video and capture publishers. It may actually help Apple conquer the entire market. It may even do them more good than jumping into bed with IBM.

Jason Cohen
Director of MIS
Merkley Newman Harty
New York

Benchmarks: add compiler

I was reading MacWEEK and came across the article showing the benchmarks for the Power Mac 9500/132 (MacWEEK, June 19, Page 28).

While the bars look neat for lots of great applications, would it be possible to add a compiler to your list?

Sure, a lot of Macintosh users are high-end graphics people, but developers also buy a significant quantity of high-speed machines to compile hundreds of thousands of code lines. Compilers make lots of demands on disks as well as on CPU power, which would make them ideal benchmarks.

It would be fairly easy to generate a project in either CodeWarrior or Think C that could take 15 minutes to compile.

Andrew Mellinger
Software engineer
Central Point division of Symantec Corp.
Beaverton, Ore.

How to contact MacWEEK

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THE MAC MANAGER DON CRABB

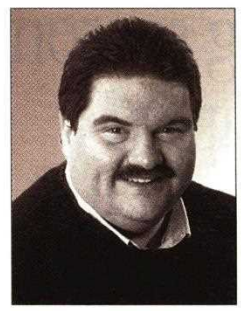
Corporate computing's monolith gets manageable

I'm starting to get excited again. Excited, believe it or not, about Apple.

Before you make me blow into the sobriety balloon, let's consider the most recent evidence I uncovered at an unlikely location — PC Expo — via an even less likely event: the Apple Enterprise Awards.

Simple, but effective

The Apple Enterprise Awards (AEA) represent a milestone in the evolution of The New Apple. At the AEA, Apple told me that it can't be all things to all customers but that it can be the right thing to many customers in the enterprise.



Listening to Apple Vice President Don Strickland lay out Apple's enterprise marketing strategy at the AEA judges dinner really opened my eyes. Apple, or certainly Strickland, is starting to get it. The AEA represent one of many Apple initiatives that promise to help it slice and dice and redefine the enterprise on its own terms.

The idea behind the AEA is simple: Have a contest in which companies and institutions submit their coolest Mac or cross-platform enterprise applications for judging. Then use these applications to show how Apple fosters enterprise solutions across domains. Simple, but effective.

Despite its rushed schedules, overlapping and sometimes confusing entry categories, and a long string of logistical snafus, the awards came off very nicely, especially for Apple. The finalists and winners felt the program worthwhile. And those of us in the audience got the message that the Mac belongs in the enterprise. Kudos to CEO Michael Spindler, Strickland and others who made the awards happen. Further kudos to Computerworld and MacIS for nagging Apple for years to create the awards.

As the AEA showed, Apple has finally figured out that enterprises are not single-purpose computing monoliths dedicated to one ultimate binary task.

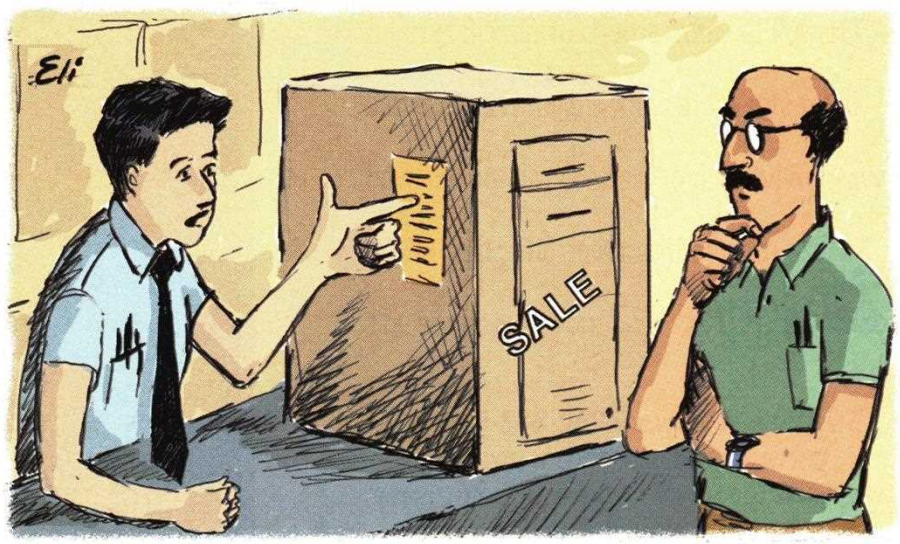
The New Enterprise

The truth is that corporate computing is composed of discrete niches, many playing right into Apple's technical strengths. At the AEA, Spindler and Strickland told me that the company is figuring out how best to build and package products for those niches, giving customers the solutions they need. And that message reinforces what Apple Vice President Dan Eilers has told me — that his No. 1 priority is building marketing systems that can deliver Apple's best solutions to these customers and support them long after the cash registers have stopped jingling.

Apple's ability to establish its role in The New Enterprise, then, all comes down to how it slices and dices the pseudomonolith. By continuing to deliver critical products and services to the business and institutional computing segments where they already dominate (graphic arts, desktop publishing, digital video, color prepress, multimedia, engineering/scientific, K-12 and higher education), Apple can expand enterprise loyalty one customer group at a time. Under this scenario, certain Intel-standard PC-bigoted IS managers, who wouldn't know a real computing solution if it ran 'em over, will be outflanked.

Assuming, of course, that The New Apple delivers these solutions for The New Enterprise. ASAP, naturally. □

Don Crabb welcomes comments at his Internet address decc@cs.uchicago.edu. You can also check out his home page at http://cs-www.uchicago.edu/~decc/.



"This is no clone. It states: Ingredients are 100 percent Macintosh and Macintosh byproducts."

Comments? Ideas? Contact Eli at elitoons@aol.com

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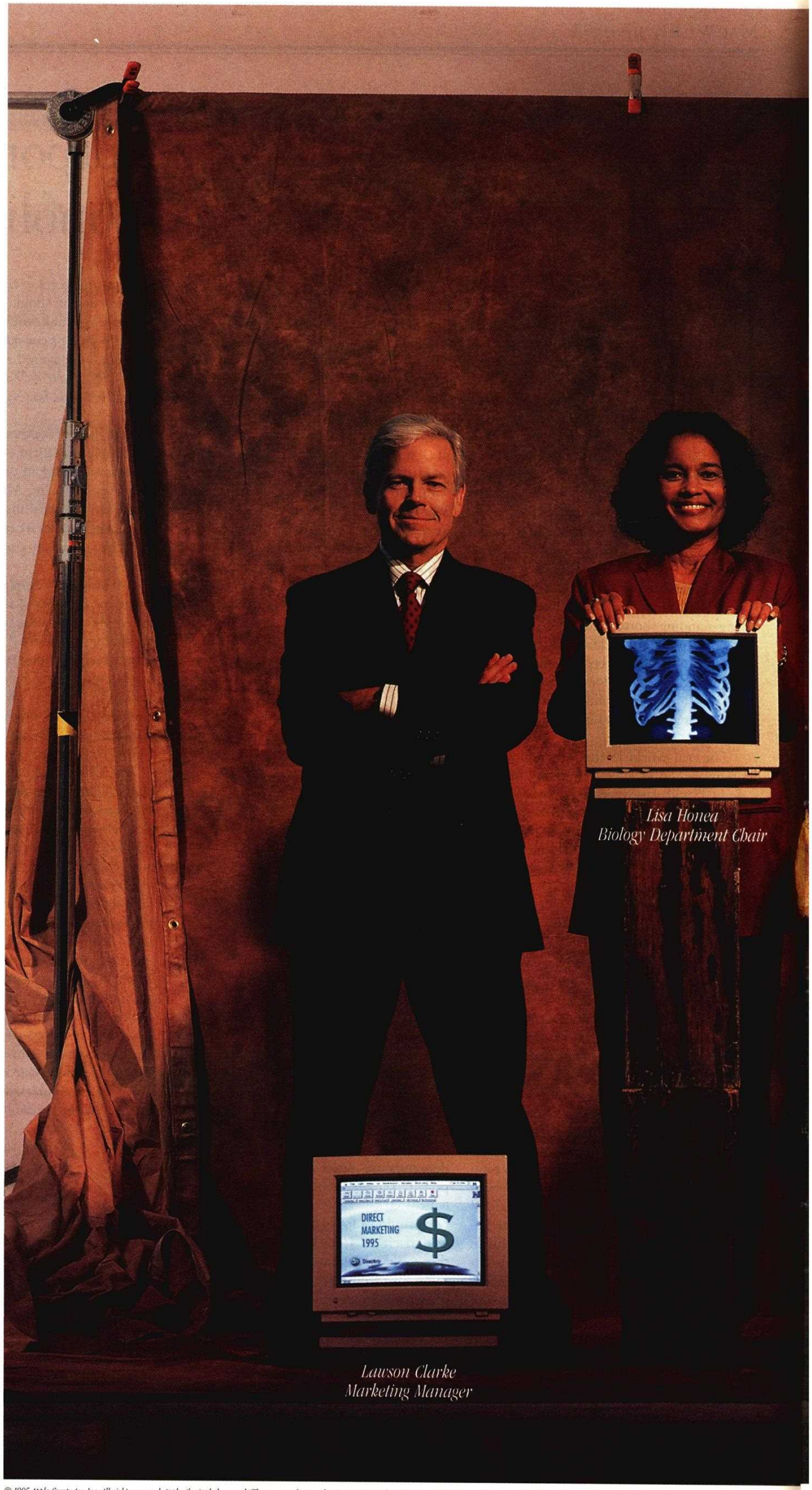

Lisa Honea
Biology Department Chair

Lawson Clarke
Marketing Manager

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PCI VIDEO

New cards from ATI and Diamond include QuickTime video acceleration as well as QuickDraw acceleration.

PowerCADD 2.0 reinforces toolbox, network support

By Timothy E. Johnson

Engineered Software's CAD app draws users in with new layer attributes, more tools.

Building on the solid foundation of its 2-D CAD program, Engineered Software has released PowerCADD 2.0. The $795 application, which is complete with parametric design features, is suited for architectural drawing, mechanical engineering and graphic design.

Version 2 has a new 3-D look to its interface, new layer attributes, publish and subscribe, and more tools for drawing arcs and inserting gaps in perimeters. New functions include commands for better printing and network utilization, editing groups without ungrouping, and converting placed EPS files into objects.

PowerCADD 2 requires a Power Macintosh, System 7 and 4 Mbytes of available RAM (8 Mbytes of RAM are recommended). Users of PowerCADD 1.0 or PowerDraw 6 (PowerDraw is the 680x0 version of PowerCADD) can upgrade for $99.

There is a lot to like about PowerCADD besides its low price. Many tools seem almost intelligent. The Heal/Join tool, for example, automatically terminates wall or line intersections: You just draw a marquee around the intersection to clean it up.

Bit-mapped and object-oriented graphics happily coexist in this program. You'll find all the usual painting and editing tools, including a new tool for making overlapping bit maps transparent.

The program handles millions of colors. You can capitalize on this by selecting objects by fill or pen color using the new Select Special dialog. We liked the dialog's button, which selects all items that match a highlighted object's graphical attributes, such as object type and pen size.

Dimensions

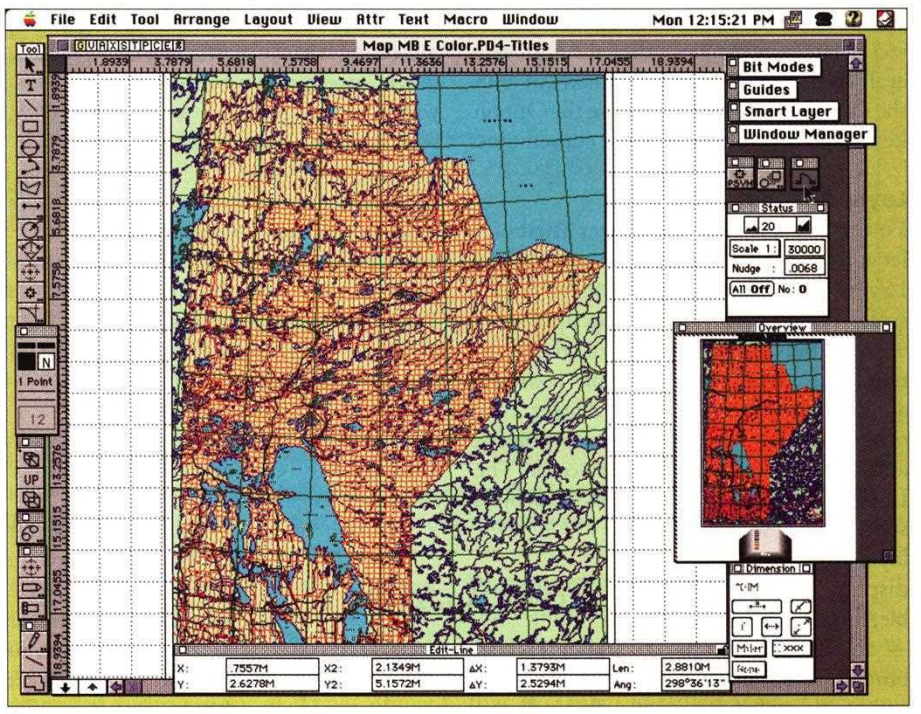
PowerCADD's automatic linear and angular dimensioning is comprehensive and completely customizable. Although a dimension will automatically update when lengthened, it won't automatically associate with an object unless you explicitly group the two. Once this is done, you can stretch the group and see the dimension automatically fill in with the new value.

If you are really into customization, you can use the built-in Pascal-like language to write macros for automating drawing tasks. This language really flies, since it compiles code. Most other CAD packages in this price range use slower interpreters.

The Filleting tool blends a circular arc between all possible combinations of lines and circular arcs — a rarity in low-cost CAD programs. (Engineered Software's $189 WildTools, an optional high-end tool palette, includes an extension for filleting to rotated ellipses and Bezier curves.)

Nearly all line tangency cases are covered, either by the snaps or the specialized tangency tools. The exception is the ro-

See PowerCADD, next page



The Overview window in Engineered Software's PowerCADD 2 shows an entire drawing. Whether you draw in this window or the main window, the action is displayed in both.

score card

PowerCADD 2.0

Engineered Software
List price: $795*
Overall value ◆◆◆◆

PowerCADD 2's most important additions are layer attributes for globally controlling a project's appearance and better printing and network utilization. The welcome publish and subscribe feature for automatically updating images over a network comes with a Convert to Objects command for transforming subscriptions into editable objects. Unfortunately, redraw speed is not consistently fast on the Power Mac, and we were disappointed that Engineered Software hadn't beefed up the program's low, four-place accuracy during the move to the Power Mac. PowerCADD covers nearly all the 2-D CAD bases out of the box, but most users will find the optional PowerDraw Translators mandatory. Still, if you find PowerCADD's accuracy acceptable, this feature-rich program is a very good value.

Performance ◆◆◆
Features ◆◆◆◆◆
Ease of use ◆◆◆◆
Documentation/support ◆◆◆

**Upgrades from PowerCADD 1.0 or PowerDraw 6.0, $99 through July 31, $129 thereafter. PowerDraw Translators, $249.*

Key ◆◆◆◆◆ *Excellent* ◆◆◆◆ *Very good* ◆◆◆ *Good* ◆◆ *Fair* ◆ *Unsatisfactory*

Data-entry tools enhance Now Contact, Up-to-Date 3.5

By Ross Scott Rubin

New QuickPad application lets you add data to either program from the desktop.

Now Software Inc. has tuned up its popular workgroup calendar and contact manager in Version 3.5 of Now Contact and Now Up-to-Date. The latest versions, which are $99 each or $149 in a bundle, feature numerous interface enhancements as well as a great new tool to assist in data-entry tasks.

Both products require a Mac with System 7.1 or higher, 2.5 Mbytes of RAM and 5 Mbytes of disk space.

Version 3.5's changes are all related to individual productivity. The programs' networking features, which we did not test for this review, remain unchanged from Version 3.0 (see MacWEEK, Jan. 2, Page 67).

The foremost addition to the Now duo is a new application called Now QuickPad, which could turn System 7.5's yellow Stickies green with envy. QuickPad completes the information exchange cycle Now has developed so well with the QuickContact and QuickDay (formerly Reminder) system menus. While the latter redefined how users accessed information from their personal information managers, QuickPad provides a dedicated, convenient mechanism for getting information into Now Up-to-Date and Now Contact without having to open either program.

You access QuickPad by pressing a customizable key combination or choosing it

See Now, next page

PowerCADD

From previous page

tated ellipse case; you can only draw lines tangent to orthogonal ellipses.

Version 2's additions definitely turn up the "power" in PowerCADD. You can draw tipped circular arcs in two new ways, either by chord length and height or by diameter.

The Break Tool for inserting gaps in object perimeters can now slice through several objects with a straight line laid out with the mouse or keyboard. You use the Option key to specify which side of the cut remains.

Layering it on

PowerCADD's three new layer attributes let you set global drawing parameters. The Layer Scale attribute controls a layer's scale. This is great for loading up a sheet with details, independent of their dimensions. The Layer Color attribute assigns a pen color to a selected layer. Any objects on that layer, or any new objects, automatically assume the layer's color. The Layer Sheet attribute defines a project style. You set each layer to the desired display status — visible, dimmed or hidden — and name the combination as a style. You can use several of these stored style sheets to organize your project for viewing or printing, depending on the audience.

New printing features include Fit to Page, for printing the active drawing on the available paper size, and Print Window, for printing just the drawing segment that shows in your resized window.

Publish and subscribe

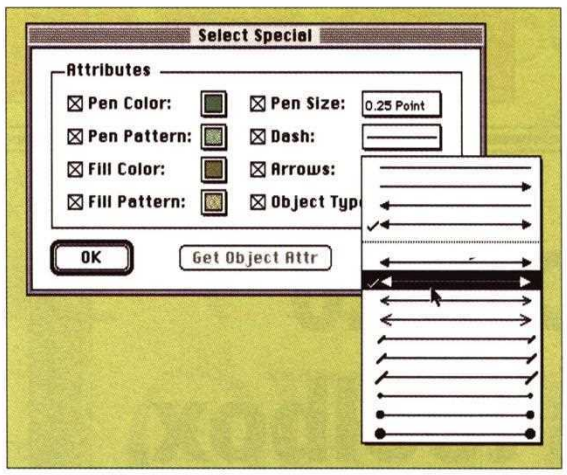
PowerCADD's implementation of publish and subscribe is one that people will actually use; it does more than act as a hot-linked Copy and Paste. Normally, a published image appears in another PowerCADD document (or in any other application that supports publish and subscribe) as an item that cannot be grouped. The new Convert to Objects command will transform the item (and EPS files) to objects that can be edited. Of course, this will break the hot link to the original publisher, so any changes to the master will no longer ripple down to the converted subscription. You may scale and translate a subscription but may not rotate it.

Usually, a subscription will work better than an instance of a PowerCADD symbol when it comes time to edit the master. You can change a symbol only by laboriously editing a copy and replacing the occurrences with a special command. On the other hand, changing a published drawing automatically changes all subscriptions, even over a network.

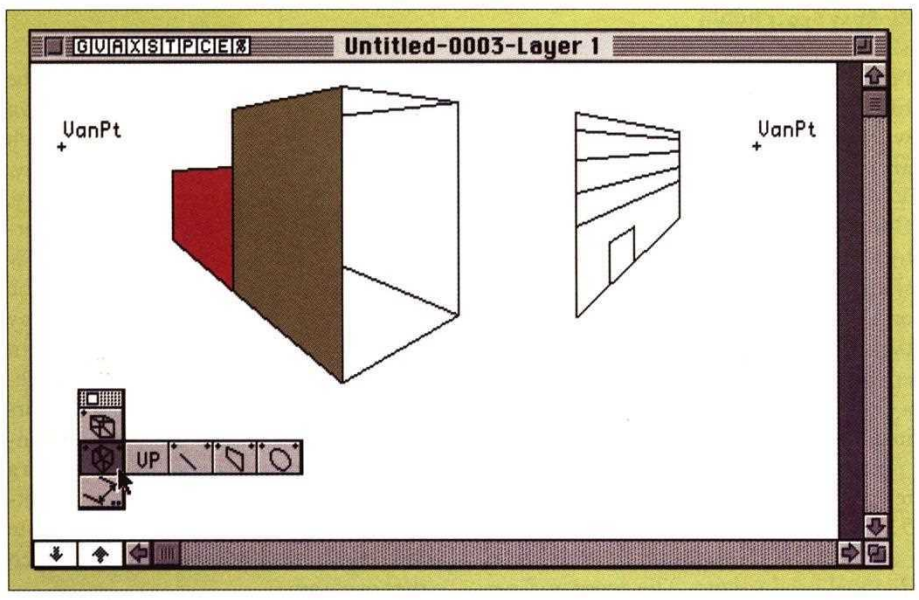
PowerCADD's implementation of publish and subscribe is one that people will use; it does more than act as a hot-linked Copy and Paste.

You'll find better network behavior in other areas as well. You can mark a file as Read Only as you open it. This will let others view your file while you work. Their changes won't stick with the file unless they use the Save As command.

If all these features aren't enough, Engineered Software offers a variety of externals and symbol libraries that are sold separately. However, you may not regard all of them as optional. Out of the box, PowerCADD imports only PICT and MacPaint files (besides its own native formats) and exports only PICT files. You'll need to buy the $249 PowerDraw Translators to read and write DXF (Drawing Interchange File), EPS and Illustrator 88 files and to read HP-GL, MacDraw and ClarisCAD files.



The Select Special dialog lets you choose objects by their graphical attributes. You can select pen and fill colors by clicking on the colored square. Clicking on the Get Object Attributes button allows you to use a highlighted object's attributes for your search.



PowerCADD 2 can help you lay out objects in two-point perspective, even though you are always drawing in 2-D. The 3-D palette has tools for drawing skewed rectangles, ellipses, lines and boxes that align with two vanishing points.

Performance

PowerCADD's showing in the speed department may disappoint you. We discovered a 153-Kbyte file took 50 percent longer to draw on a Power Mac 8100/80 than on a Quadra running PowerDraw 6. Engineered Software couldn't explain the slow behavior.

However, a 1.4-Mbyte file on the Power Mac updated more than two times faster on the Power Macintosh (redraw speed of five seconds). Our limited testing shows files redraw, on the average, two times faster on the Power Mac.

At any rate, PowerCADD 2 is fast, but this is because the program uses short integer math, resulting in an accuracy of one part in 32,768, or four decimal places. This makes it impossible to draw skyscrapers and real estate lots at useful accuracies.

Documentation and support

PowerCADD's documentation is good but loses points for the lack of a tutorial. Engineered Software provides free, competent technical support; the company also maintains a presence on America Online and AppleLink.

Conclusions

Your expectations for a speed increase over PowerDraw may fade with this release; our tests showed some speed improvements, but your mileage may vary. We were also disappointed to see Engineered Software hadn't beefed up the program's low, four-place accuracy during the move to the Power Mac.

On the other hand, PowerCADD's feature list is certainly the most exhaustive of the 2-D CAD programs. Among the new features, we liked the transparency feature for bit maps and the layer attributes for organizing large projects. For networked offices, the Read-Only viewing of drawings and the publish and subscribe features will be the most welcome additions. If you can live within the program's accuracy limits, then this program is unbeatable as a 2-D CAD package.

Engineered Software of Greensboro, N.C., can be reached at (910) 299-4843; fax (910) 852-2067; eng_sw@aol.com. □

Now

From previous page

from the Apple menu. QuickPad's data-entry interface and intelligence distinguish it from other rapid information-entry tools, such as the Grabber control panel in Common Knowledge Inc.'s Arrange (see MacWEEK, Oct. 31, 1994, Page 36) and the Snap control panel included with The Prairie Group Inc.'s InTouch (see MacWEEK, May 22, Page 36).

While Snap and the Grabber can copy information from other applications into InTouch and Arrange, QuickPad is akin to the pen and paper scrap you search for when you're on the phone with someone, letting you quickly jot down appointments, calls and to-do items on the fly. It even includes date stamping and a timer for call tracking.

The cherry on the sundae, though, is that QuickPad recognizes names and certain key words to help automate data entry. For example, typing "lunch with Dave" in the Note Title field initiates a search for "Dave" in Now Contact's primary file and schedules an appointment between the default lunch hours of noon and 1 p.m. with the first Dave it finds. You can easily switch to any other Dave in your contact file by clicking a small icon that pops up a list of the other search hits. Using key words such as "breakfast," "lunch" and "call" provides a finer degree of control over an item's PIM location than either Snap or the Grabber provide.

Quick study

Ironically, QuickPad's intelligence far outstrips Now Up-to-Date's, which cannot even automatically search for contacts, much less know when to schedule lunch with them. Because of this, you may want to use QuickPad instead of Now Up-to-Date's normal scheduling methods. Still, QuickPad's linking power falls short of Rae Technology Inc.'s Rae Assist, whose relational underpinnings allow you to schedule appointments with multiple contacts.

As impressive as QuickPad is for a first implementation, we're already pining for more. Currently, QuickPad displays only a contact's name, company and one of four phone fields; access to some of Now Contact's custom fields would allow QuickPad to display e-mail addresses essential to many Mac users.

Designating priorities for To-Do items would also be a boon, as would the capability to route QuickPad entries directly to other Now users on the network. (QuickPad can already send items to public categories.) Finally, a brief list of a day's activities, similar to what QuickDay provides, would help in determining daily time availability without having to check the QuickDay menu.

Along with QuickPad, another great data-entry aid new to Version 3.5 is Now Contact's capability to cleverly copy the area code and prefix of a work phone number into a fax field.

New interface areas for keeping better track of pertinent information adorn both products. Taking a cue from its former

See Now, next page

score card

Now Contact and Up-to-Date 3.5

Now Software Inc.
Overall value ◆◆◆◆ **List price: $149***

With Versions 3.5 of its contact manager and scheduling program, Now Software continues its formula for success by putting compelling individual productivity features into workgroup products. The upgrades' best new feature is Now QuickPad, a useful sticky-notes tool that lets you quickly and intelligently route information into Now Contact and Now Up-to-Date without having either program open. With numerous other improvements to their already refined interfaces, such as banner wrapping and simplified meeting tracking, the duo features a breadth and maturity unequaled in the Mac PIM market.

Performance ◆◆◆◆ **Ease of use** ◆◆◆◆
Features ◆◆◆◆ **Documentation/support** ◆◆◆◆◆

**For two-program bundle; individual price, $99. Upgrades for owners of Now Up-to-Date 3.0 or Now Contact 3.0, $19.95 (for the bundle). Upgrades for users of previous versions, $29.95 for individual products, $49.95 for bundle. Both products are also available in five-, 10- and 50-pack configurations.*

Now

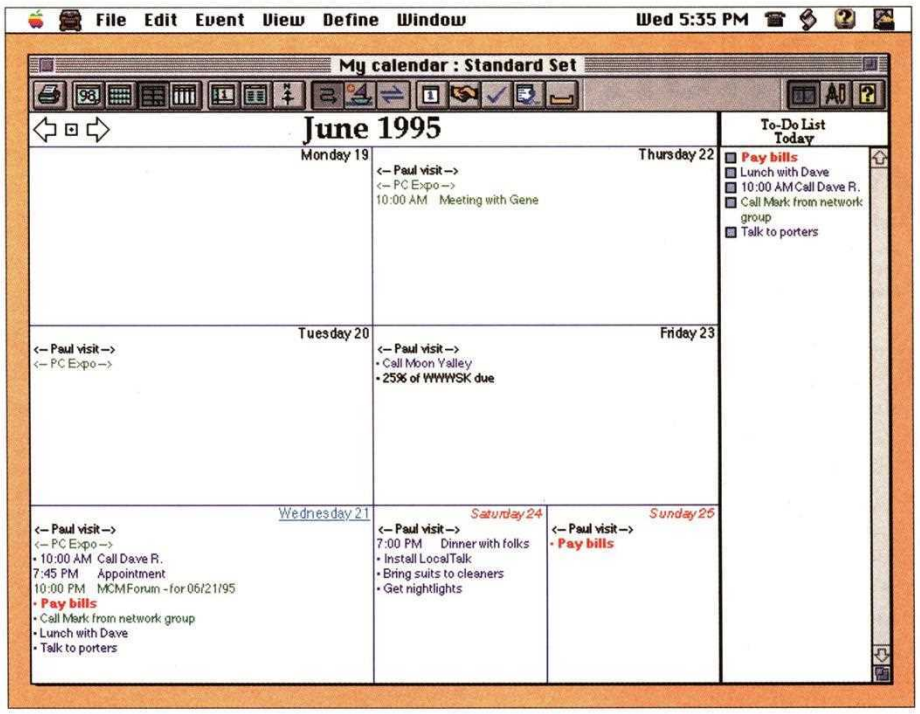
From previous page

competitor DateBook, which Now acquired from Adobe Systems Inc., Now Up-to-Date creates a list to the right of most calendar views in which you can see the current day's appointments at a glance without having to cram them into a single calendar square. While the list allows you to easily re-prioritize by dragging items to other parts of the list or to other days, it does not support hierarchical lists such as those in Attain Corp.'s In Control (see MacWEEK, April 24, Page 23).

Now Contact includes a new Comments field that allows you to quickly jot down notes that are not shared with others on the network. These comments can be turned into the product's traditional Notes by dragging and dropping them into the Notes area.

Now has improved its support of Drag and Drop as a way of moving information into, among and out of its applications, but it is still an awkward embrace. While QuickPad supports the feature very well, Now Contact continues to treat records dragged out of it as lines in a merge file. This might be appropriate for a selection of multiple records but makes no sense when dragging a name out of Detail view. Our wish to drag formatted addresses out of Now Contact into the word processor of our choice remains unfulfilled.

Other long-standing issues have been addressed, though. Now Up-to-Date can now change a single instance of a repeating event without affecting other instances and can wrap banners across weekends. Now has finessed the latter without disrupting the flexibility of banner placement. The company has also streamlined viewing meetings by not forcing you to subscribe to public categories that contain group meetings.



Up-To-Date 3.5 features a daily to-do list on the right that is visible in Week and Month views. This makes it easy to check off tasks at a glance without having to scroll through a daily view.

Performance

Apart from a minor installation glitch that prevented QuickPad's icon from initially being displayed, these releases, particularly Now Contact, seem more stable than their 3.0 predecessors. We encountered no problems with popping up QuickPad in a variety of applications; this is likely because it is an application rather than an extension. QuickPad even handled low-memory situations gracefully.

Documentation and support

Both products' excellent manuals have been updated for the new release. Now also includes a brief new features guide that explains QuickPad well. The company provides technical support via toll call, fax and popular on-line venues. After about five minutes of waiting, Now's technical support personnel answered our questions smoothly.

Conclusions

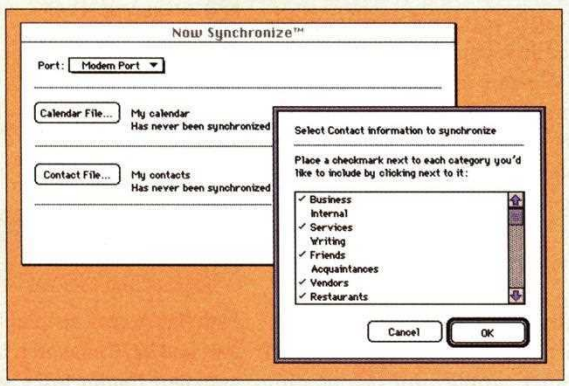
With Version 3.5, Now Contact and Now Up-to-Date lengthen their lead as the Macintosh's premiere personal information team. The new QuickPad application, integrated into both programs, brings the PIM pair full circle in the critical area of information accessibility. As the forthcoming Now Synchronize (see story, left) will demonstrate, Now's future challenge is to improve integration with e-mail programs, PowerTalk, PDAs, pagers and other products. For now, though, these impressive PIMs' next hurdle will be their debut on Microsoft Windows. They make the leap well-prepared.

Now Software Inc. of Portland, Ore., can be reached at (503) 274-2800; fax (503) 274-0670, info@nowsoft.com. □

Now Software stays in sync

While Now Software Inc.'s Now Up-to-Date has long supported connections to Sharp Inc.'s popular Wizard organizers, the company will soon release Now Synchronize, a $49.95 application that resides on both the Macintosh and Apple's Newton MessagePad and will allow users of Now's desktop personal information manager and Apple's PDA to keep their desktop and portable data in sync.

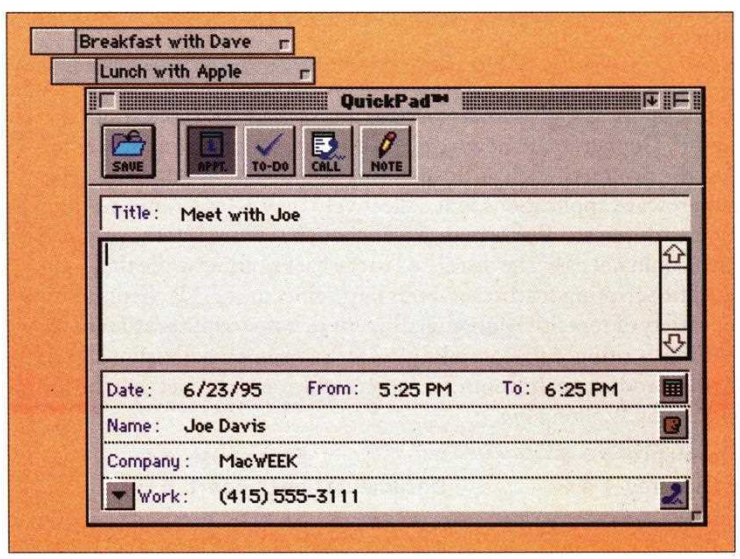
Signaling what Apple has stated is a new direction for Newton, Now Synchronize communicates directly with the PDA instead of using Apple's $99 Newton Connection Kit, which has been criticized for slow operation. One advantage of the Connection Kit that Now Synchronize does not currently provide is the capability to connect a Newton via AppleTalk, although the Newton interface appears to accommodate multiple connection methods.



Now Synchronize will reconcile both Up-to-Date and Contact files with Newton devices. Checking off categories lets users select the data to exchange with their Newtons.

In the alpha version of Now Synchronize we examined, the Newton component used only 50 Kbytes, making it practical to keep in the internal memory of MessagePad 110s and 120s. While Now Synchronize supports contacts, to-dos, appointments and holidays, differences in the way the Now software and the Newton handle repeating events may be a factor for those who plan to use both organization tools.

Now Synchronize's one-window interface provides buttons for selecting contact and calendar files and for choosing which categories you'd like to include. The company's preliminary documentation wisely advises that Now Up-to-Date users archive old data to avoid overwhelming the Newton's limited memory. We hope a future version provides a check box for excluding items before a specified date.
— By Ross Scott Rubin



QuickPad lets you route new appointments, to-do items, calls and notes into Up-To-Date and attach them to Contact without having to open either program. You can use predefined keywords to perform intelligent look-ups of Contact records.

Wollongong suite offers Internet path

By Jonathan A. Oski

PathWay Access 3.1 offers full-featured collection of TCP/IP applications.

Whether you will be accessing an in-house computer system or hosts on the Internet, chances are you will need a suite of TCP/IP applications before too long. The Wollongong Group Inc.'s PathWay Access for the Macintosh 3.1 comes with a variety of TCP/IP applications, including FTP, Gopher, Telnet and LPR printing and e-mail/newsreader clients, as well as FTP and LPR print server applications. Rounding out the $350 package are a script compiler and keyboard remapping utility.

The PathWay Access suite, which requires System 7.1 or later, faces competition from an array of freeware and shareware alternatives as well as commercial products such as InterCon Systems Corp.'s TCP/Connect II (see MacWEEK, April 3, Page 27). Like TCP/Connect II, PathWay Access is targeted at users willing to pay more than shareware prices for an all-in-one connectivity solution with a consistent user interface. All of the applications in the suite, with the exception of the Mail application, are accelerated for the Power Mac.

Installation

PathWay Access uses a standard installer to load either the 680x0 or Power Mac version of the suite on your Mac. The package also includes all the system software you need to run the applications, including Apple's Network Software Installer, MacTCP, the Apple Shared Library Manager and MacPPP. Unfortunately, some of the versions of the included components are already a little outdated, including the Network Software Installer 1.4.5, now at Version 1.5.1; MacTCP 2.0.4, now at Version 2.0.6; and the Shared Library Manager 1.1.1, now at Version 1.2. These versions are all usable, but you will need to download the newer releases if you want the latest from Apple.

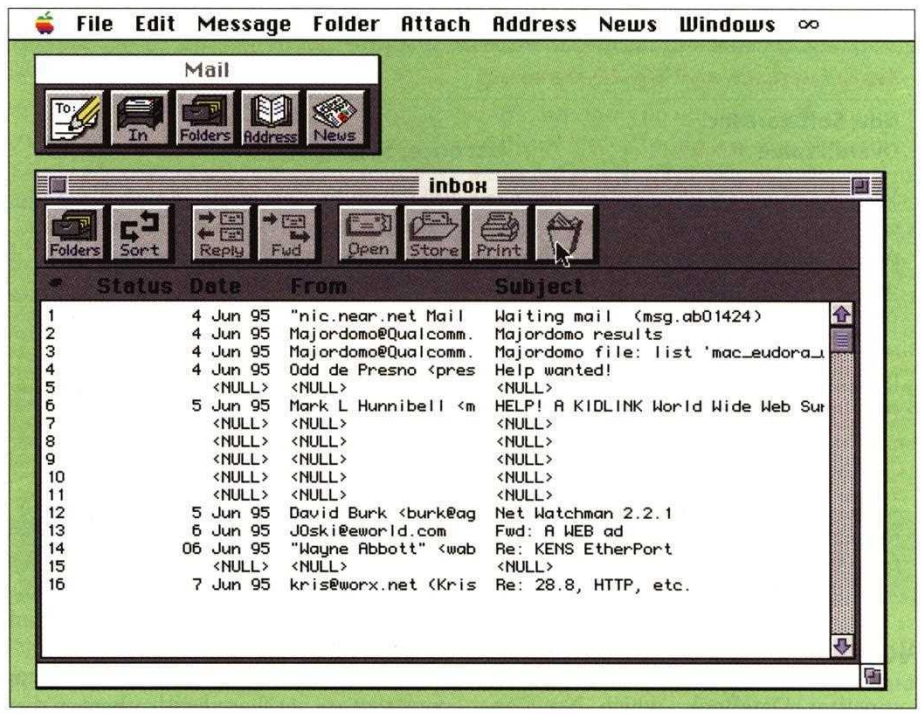
I read the news today

PathWay Access' e-mail and news clients are combined into a single application called Mail. The Mail application does a good job handling most of the generic tasks one would expect of an e-mail client. A floating palette allows you to quickly open your in-box, compose a message and manage your address book or mail folders with a single click. You can set up the mail client for a single user or to be shared by a defined list of users. When multiple users share the same workstation, each user must supply a password to access his or her mailbox.

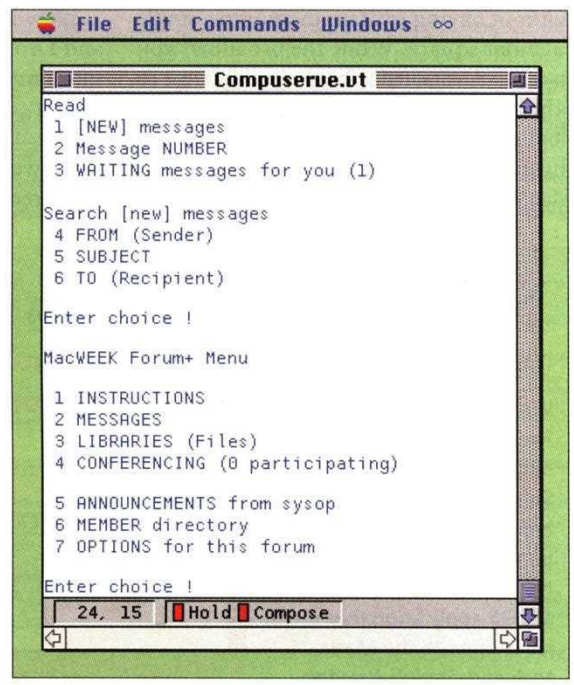
PathWay Access Mail lets you manage your mail in folders. Along with three default folders — drafts, inbox and outbox — you can create your own folders to store messages either locally or on remote servers. The Mail client can accommodate attachments, but, unfortunately, unlike mail programs such as Qualcomm Inc.'s Eudora, it supports uuencoding/decoding only for binary attachments; BinHex, which is frequently used for Mac files stored on Internet servers, is not supported, nor is MIME (Multipurpose Internet Mail Extensions).

The newsreader lets you easily subscribe to or unsubscribe from any groups on one or more Network News Transfer Protocol news hosts. Unlike other newsreaders, such as John Norstad's outstanding NewsWatcher freeware, it does not let you create multiple lists of subscribed newsgroups, nor does it handle message threading, which is a big disappointment. The only way to effectively read a thread of messages is to sort by subject and hope that the messages appear sequentially — a pretty laborious fix. This also makes it difficult to extract binary files from messages that are posted as a thread because you have to reassemble the file separately.

We ran into some problems using Mail with our Internet service provider that we were unable to resolve. Some mail messages weren't showing up, and we were unable to read some news articles or post any news.



The Mail application in Wollongong's PathWay Access has a handy floating button palette, which lets you quickly open your inbox, manage folders, create messages, manage your address book or read Usenet news articles. Once a folder is open, you can sort messages by status, date or subject.



PathWay Access' scriptable Telnet applications include both a VT and 3270 emulator. Using the script compiler, you can automate routine tasks, such as logging into a system or collecting reports or other data from a remote host.

Telnet automation

PathWay Access includes two Telnet applications, one for VT100-340 emulation and another for IBM 3270 emulation. By themselves, they offer the basic functionality one would expect from a terminal-emulation package, including support for various character sets and the capability to specify screen colors and fonts. You can also choose from a variety of specific terminal types not readily available in shareware/freeware alternatives, including VT100, VT220, VT240, VT320 and VT340, as well as IBM 3278 models 2 through 5 with extended attribute support.

Wollongong has greatly enhanced its Telnet applications, however, by incorporating the capability to remap the keyboard and create compiled scripts for automating repetitive tasks. You can run scripts at any time from a terminal session, or, to help automate session start-up, you can have a script execute when a session is opened.

There is no script recorder, so you must create your scripts manually, but this is made easier by the capability to paste commands from a menu and be prompted for any necessary or optional command parameters. Script debugging can be a hassle since there is no debugging feature, but the compiler does check for syntax and variable errors at compile time, which does help ensure their security.

Gopher it

You can use PathWay Access' FTP client to connect to an FTP server on a variety of environments, including Mac, DOS, Unix, VMS and VM. It too is scriptable and allows you to have as many as 15 separate FTP connections open simultaneously. A drop-down menu lets you issue virtually any FTP command to the remote host to perform such

See PathWay, Page 44

score card

PathWay Access for the Macintosh 3.1

Wollongong Group Inc.
Overall value ◆◆◆ **List price: $350***

The Wollongong Group Inc.'s PathWay Access is a suite of TCP/IP applications that includes Telnet, FTP, Gopher, mail, newsreader, printing, scripting and server applications. Some of the products, such as the newsreader, are not as full-featured as widely available shareware applications, but collectively they offer a range of functionality that is hard to duplicate. Performance was good, but we found the products to be CPU hogs that could not easily be dismissed to the background while they were performing tasks. The scripting features in both the Telnet and FTP clients allow you to automate a variety of repetitive functions, but there is no script recorder or debugging tool, making writing and compiling of scripts somewhat tedious. The biggest benefits to this product are its common user interface and the fact that the full suite is well-supported by Wollongong.

Performance ◆◆◆ **Ease of use** ◆◆
Features ◆◆◆ **Documentation/support** ◆◆◆◆

**Single-user license; 10-user license, $1,995; 100-user license, $12,495.*

ClarisWorks 4.0: Elegance by design

By Dale Coleman

ClarisWorks 4.0 continues Claris Corp.'s tradition of upgrading its top-selling integrated application with only those enhancements that harmonize with the product's overall design. This upgrade includes major word processing enhancements, including style sheets, several new database additions, three new assistants and a host of other changes.

Style sheets, other features smoothly integrated in an all-in-one package.

These improvements increase ClarisWorks' appeal without stretching its system requirements. The $129 product requires at least a 68020 Macintosh, System 7 and 4 Mbytes of RAM. The hard disk requirement is 1 Mbyte of space (2 Mbytes for Power Macs); a full installation will cost you 14 Mbytes.

The document's the thing

Word processing is a pervasive task, and, the major enhancements to ClarisWorks' word processing capabilities reflect that. The basics now include end notes, right- and left-facing pages, and Microsoft Word-style document sections.

Users got a word-count feature in Version 3.0 (see MacWEEK, Nov. 28, 1994, Page 35), but they complained about its inability to count the active selection of text (it provided character, word, line, paragraph and page counts). Version 4 finally adds this feature.

The hottest enhancement to word processing, however, is the addition of style sheets, which are available from a pop-up menu on the ruler or the Stylesheet palette. This is the most accessible implementation of styles we've seen. The tool palette makes it easy to apply styles to text and graphics regardless of which set of ClarisWorks tools you are using. Version 3's Outline view is gone; instead, outlines are a function of the Stylesheet palette, an arrangement that makes the old method seem clumsy.

Data and pictures

The database is the beneficiary of several important new features. The new List view fills a gap in the ClarisWorks ensemble and demolishes one of the few frail arguments you could make in favor of Microsoft Works (see MacWEEK, Aug. 22, 1994, Page 35). Generating reports is much easier in Version 4 with the new FastReports feature, which lets you automate repetitive report generation tasks.

New field types, including Names, Radio Buttons, Check Boxes, Pop-Up Menus, Serial Number, Value List and Record Info, help you create more manageable database documents. In addition, the Shortcuts palette now sports Layout, Search, Sort and Report buttons, making even more database functions just a click away.

Despite appearances, ClarisWorks' database is still not related to Claris' FileMaker Pro, and there is no file compatibility between the two.

Administrative assistants

The idea behind the clever and powerful ClarisWorks assistants, which were introduced in Version 3, was that most users don't aspire to become technical experts — they just want to get the job done.

Assistants help them do that by automating the process, whether it's creating a document or calculating your personal net worth. The user answers questions, in many cases guided by the assistant's expert advice on layout, design and even content.

The three new assistants — Home Finance, Mail Label and Certificate — join the existing eight, which automate tasks such as creating address books, envelopes, presentations, footnotes and calendars. Home Finance can calculate net worth, mortgages, car loans and budgets based on salary and other variables. Mail Label provides users with a choice of 50 label formats. And the Certificate assistant creates documents resembling awards and official certificates.

ClarisWorks' assistants are superior to Microsoft Works' wizards because of their expert advice. For example, the Home Finance assistant recognizes that you don't want to become spreadsheet-literate; you simply want to see how large a mortgage you can afford. It queries you only on relative information and provides suggestions for details you may have forgotten.

ClarisWorks 4 includes new ReadyArt Libraries, 500 pieces of clip art grouped by category. When you select a category, the available clip art is displayed as thumbnails in a floating tool palette from which you can drag and drop pieces to your document. This interface is quite similar to that of Claris Impact's library. But as with ClarisWorks' database and FileMaker Pro, the libraries are not compatible.

Bringing up the rear

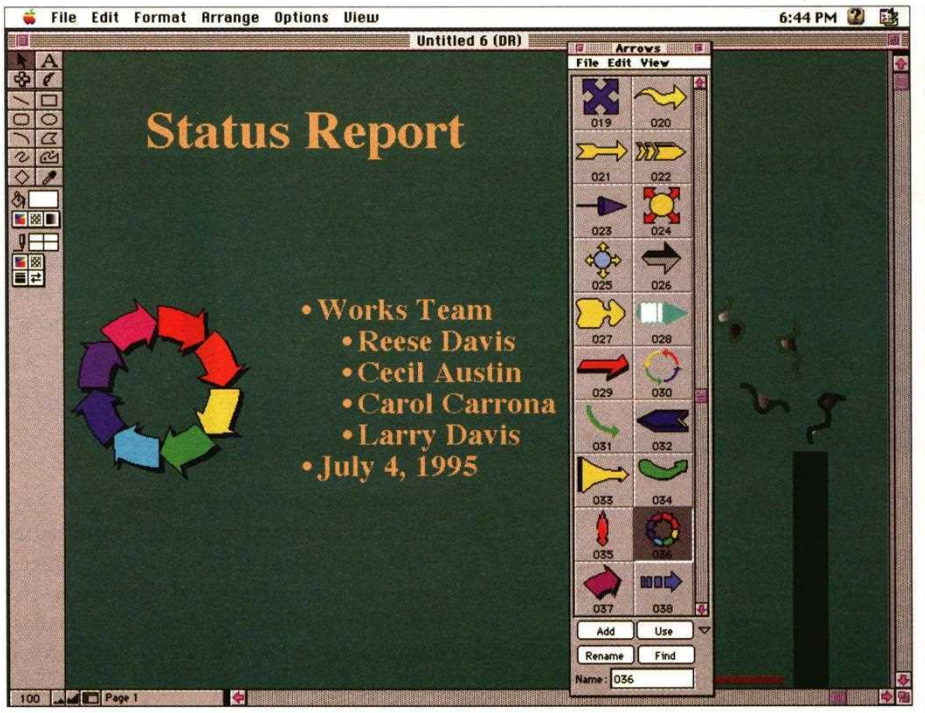
The Draw module now supports free rotation objects; other than that it's pretty much the same. Spreadsheet enhancements are similarly sparse. A new Fill Special command helps make data entry less onerous (and more accurate) by automatically filling in cells with data from another cell, a repeating pattern, or date and time information. The Cell Note feature of Microsoft Works is still a glaring omission here.

The macro recorder is unchanged, but in a major breakthrough, Claris' designers enhanced the Shortcuts tools palette so that it can display both icons and shortcut names. Apparently we are not alone in our poor button-icon recognition skills, as the Shortcuts palette now supports balloon help — one of the few useful applications of this mostly ignored Apple technology. Version 4 now also supports AppleScript.

ClarisWorks 4 is the first general-purpose product to have a fully integrated Internet authoring tool. The HTML Translator appears in the form of a World-Wide Web page stationery document with associated style sheets for Web-page formatting. Although it makes creating Web pages fairly easy, ClarisWorks' HTML (Hypertext Markup Language) Translator does not convert graphics or Hypertext links.

There is still no translation for Microsoft

See ClarisWorks, next page



The marriage of the Mac operating system's Drag and Drop and ClarisWorks 4's ReadyArt Libraries (which can also contain text and QuickTime clips) encourages the use of graphic elements in documents. The background document was created with the Certificate assistant.

score card

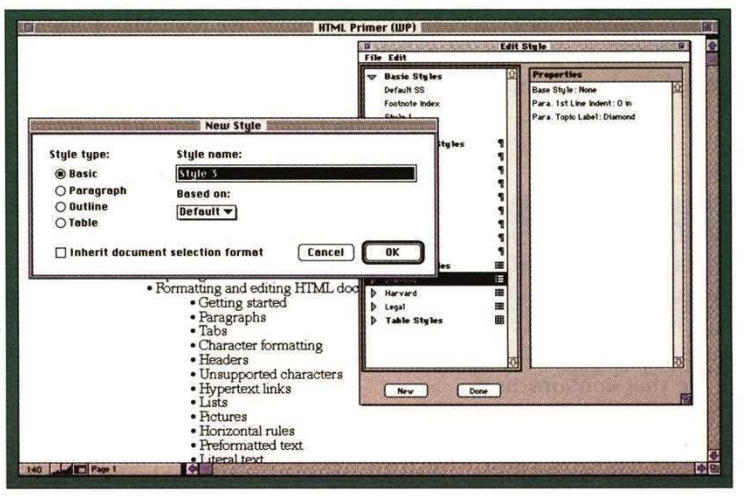
ClarisWorks 4.0

Claris Corp.
List price: $129*
Overall value ◆◆◆◆◆

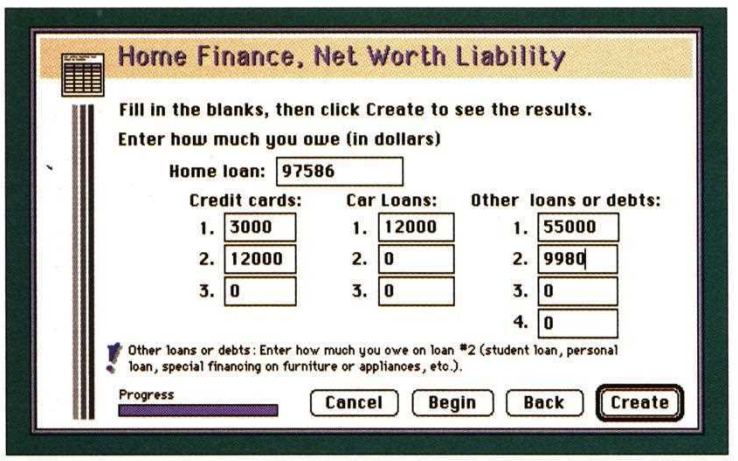
ClarisWorks 4.0 is a remarkable achievement, offering a slew of features without altering the basic personality of this best-selling Mac integrated program. The new 68020-or-greater Mac requirement and hard disk demands are nominal compared to those of Microsoft Works. New assistants and document templates, editable predefined and custom styles, and the Claris Impact-style clip-art library enhance ease of use and increase productivity. Our biggest complaint is compatibility with older versions: A provision for saving files in earlier ClarisWorks formats would be helpful, especially for those in mixed-platform environments. Otherwise, we recommend ClarisWorks 4 without reservation.

Performance ◆◆◆◆◆
Features ◆◆◆◆
Ease of use ◆◆◆◆◆
Documentation/support ◆◆◆◆

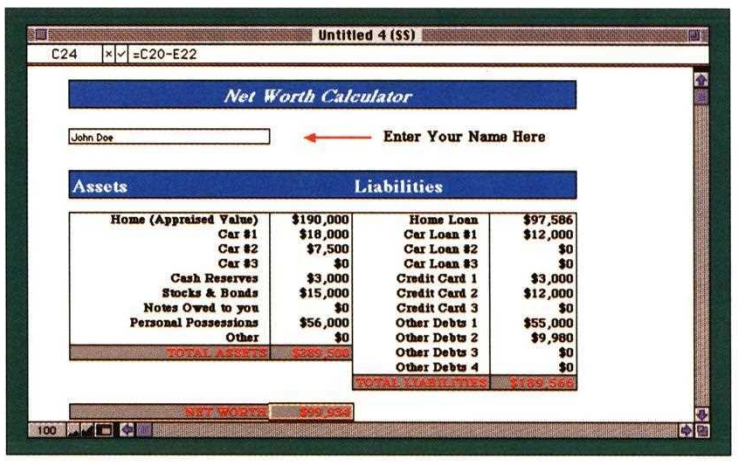
**Upgrades from previous versions, $49.*



ClarisWorks' new word processing styles are easy to learn and use. The clean, elegant design of the Stylesheet palette reflects the consistent philosophy evident throughout the application.



Using the ClarisWorks spreadsheet in combination with the Home Finance assistant, you can calculate personal net worth without dealing with cells or formulas.



After you enter asset and liability information into simple fill-in-the-blank screens, the assistant generates a Net Worth Report. The Home Finance assistant can also figure mortgages and budgets.

ClarisWorks

From previous page

Word 6, although we're not convinced it's terribly missed. What we would like to see is support for other ClarisWorks formats and platforms. A method for batch-converting files created with earlier versions of ClarisWorks would make upgrading less tedious, while a provision for saving files in earlier ClarisWorks formats would make upgrading less painful, especially for those in mixed-platform environments (ClarisWorks 4.0 for Windows is slated to ship in August).

Documentation and support

ClarisWorks 4's good printed documentation also carries on the policy of reduced bulk. Users are expected to refer to the extensive on-line help system, which is easier to use than the previous version. Several support avenues are available. Telephone support is generally quite good, although you can expect some delays from time to time. The ClarisWorks Users Group is a great addition to the standard support, featuring on-line service, prerecorded information and a variety of other benefits. (A brochure on the user group is included in the ClarisWorks 4 package.)

Conclusions

"Give them what they ask for" is a good rule of thumb for developers, but merely tossing in new features to the exclusion of good design principles usually results in misshapen, elephantine products with little broad appeal. ClarisWorks avoids this trap completely by paying careful attention to detail.

Some users have already abandoned the current crop of overloaded word processors for ClarisWorks, and the enhancements to Version 4 will make it possible for even more users to become reacquainted with the pleasures of unencumbered word processing.

The product's compact feel, general responsiveness and pervasiveness should make it an automatic choice for anyone outfitting a general-purpose Mac.

Claris Corp. of Santa Clara, Calif., can be reached at (408) 727-8227 or (800) 544-8554; fax (408) 987-3932. □

PathWay

From Page 42

tasks as making and removing directories, appending files, or getting a file directory. No other product we've seen matches this client's level of FTP command functionality.

One deficiency in the FTP client, at least from a Mac user's perspective, is the lack of any way to couple the application with an encoding or decoding application to ease the process of dealing with binary files. Unlike Fetch, a popular shareware program from Dartmouth College that automatically recognizes the type of file being transferred, the client for PathWay Access requires you to specify the file type before retrieving or sending a file.

The Gopher application offers an easy way to search for files throughout the Internet and comes preconfigured with a list of popular Gopher servers from around the world to make the job even easier. This is good because there is no documentation for the Gopher client included with the suite.

> Users will appreciate PathWay Access' all-in-one approach to connectivity, as well as having one company support all their TCP/IP clients.

Your serve

Along with all the client applications, PathWay Access includes FTP and LPR print server programs so you can turn any Mac into an FTP server or print spooler.

There is essentially no user interface for the FTP server, since all configuration is handled by a text file that contains user names and their respective rights. You cannot grant rights on a volume-by-volume or folder-by-folder basis, so this is significantly more limited than most other FTP implementations.

The LPR print server allows you to use your Mac to accept jobs from LPR print clients such as Sun workstations and spool jobs to any AppleTalk network printer. On the flip side, the Print Client application allows a Mac client to spool jobs to an LPR printer. What's nice about this is that you can queue a series of documents and have them all print at the same time.

Performance

The PathWay Access clients performed well in general, but we did find all of the clients to be fairly CPU-intensive. When any client was performing a task, it was difficult to move it to the background to try to work on something else.

Documentation and support

Except for the lack of documentation for the Gopher client, we found the PathWay Access manual to be quite good. The bulk of the manual is devoted to scripting and managing mail, two topics that probably deserve the most attention, but the remaining features are sufficiently documented. An appendix devoted to troubleshooting is also very helpful. Wollongong's technical support was very responsive to our questions and worked hard to address the few problems that we encountered during our evaluation.

Conclusions

The Wollongong Group's PathWay Access 3.1 includes a reasonably complete set of TCP/IP applications with a similar look and feel. Missing are a World-Wide Web browser and Archie client, though Gopher can provide similar functionality to the latter, and Wollongong said it plans to add a Web browser in a subsequent release or companion product.

While all of the capabilities incorporated into the PathWay Access applications can be found in freeware or very inexpensive shareware applications, many users will appreciate the convenience of an all-in-one approach, as well as the security of having one company supporting all their TCP/IP clients.

InterCon's TCP/Connect II offers a similar package with a more integrated feel to it, but it is missing some features that PathWay Access offers, most notably scripting. While some of PathWay Access' clients could use further tweaking, others are quite powerful indeed, making this a good value overall.

The Wollongong Group Inc. of Palo Alto, Calif., can be reached at (415) 962-7100; fax (415) 969-5547. □

Why a 5-diamond review for a not-so-slick Scripter?

I was surprised to read your overwhelmingly positive review of Main Event Software Inc.'s Scripter (MacWEEK, June 12, Page 29).

I find the program's user interface to be poor-to-average, but this was never reflected in the review. Among other things, the list, record and other "editors" are quite ugly (for example, small buttons overlap lines and there is no visible indicator that there is a splitter), the palette is quite bland, and the script editor's zoom box is not in the corner of the window.

I think the "stuff behind the interface" is quite good, but I think the interface itself needs a major face lift. I come to expect a "slick" Macintosh interface on five-diamond products.

Tom Carstensen
President
Evatac Software
Reston, Va.

MacWEEK replies:

User interfaces, by their very definition, evoke an intensely personal response. We found Scripter's interface to be simple, elegant, powerful and intuitive. The program is easy to use without reading any of the manual. The editing windows are clean and remarkably free of the interface widgets and doodads that get in the way of real program development.

"Slickness" is not always a function of 3-D buttons, graphical objects and fancy windows that obscure their purpose — it's a matter of form following function.

In our opinion, Scripter has as slick a Mac interface as you'll find on any product.

Send your comments to MacWEEK Reviews Department, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; fax (415) 243-3602. Include your name, address and phone number. We reserve the right to edit for clarity and length.

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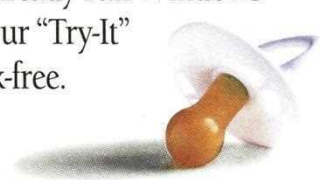

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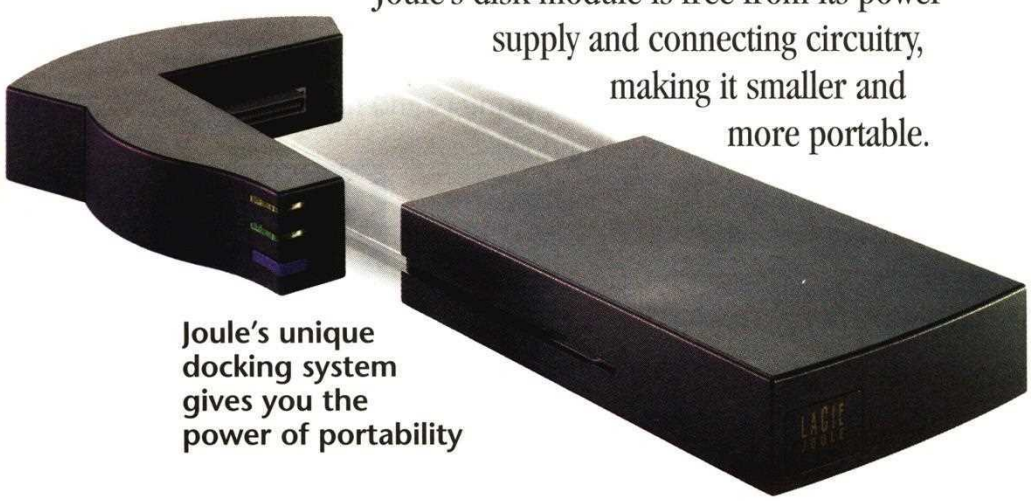

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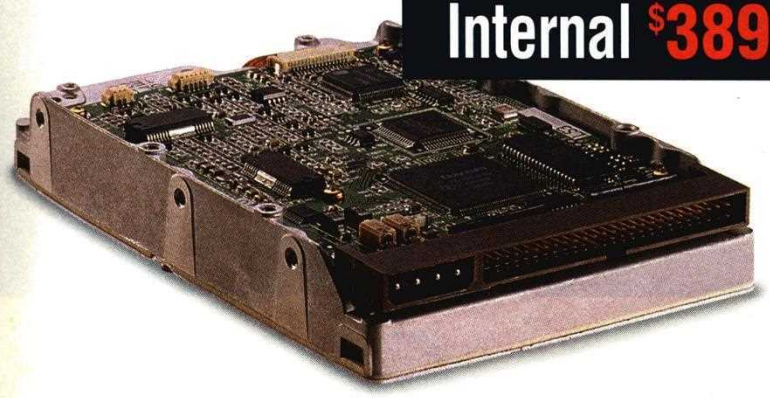

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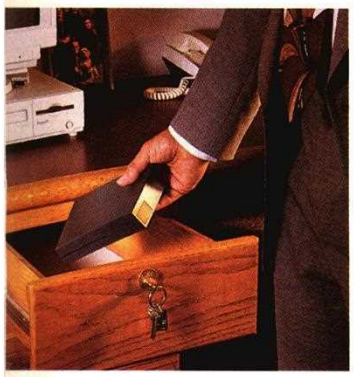

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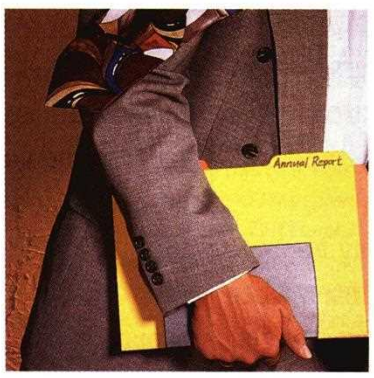

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DRIVING ARRAYS

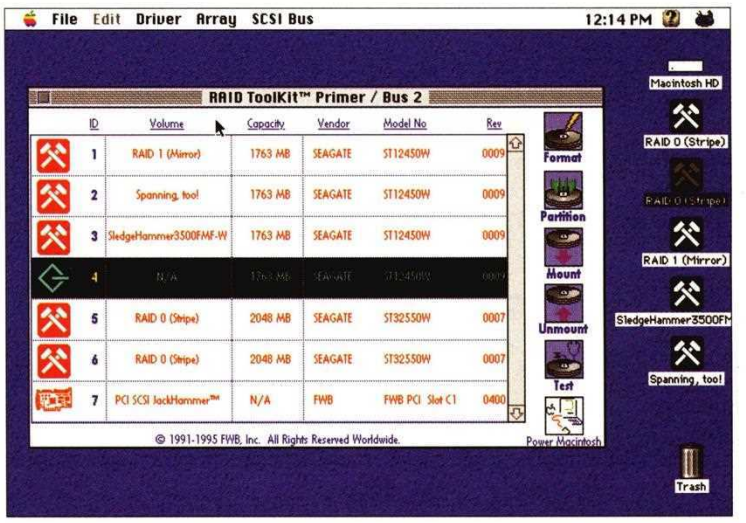
The 1995 Disk Drive Arrays report predicts a 28.8 percent growth in 'single-user' arrays.

— Disk/Trend Inc.

STORAGE

RAID software boosts flexibility

By Larry Stevens


File Edit Driver Array SCSI Bus
12:14 PM
RAID ToolKit™ Primer / Bus 2
ID Volume Capacity Vendor Model No Rev
1 RAID 1 (Mirror) 1763 MB SEAGATE ST12450W 0009
2 Spanning, too! 1763 MB SEAGATE ST12450W 0009
3 SledgeHammer3500FMF-W 1763 MB SEAGATE ST12450W 0009
4 N/A
5 RAID 0 (Stripe) 2048 MB SEAGATE ST32550W 0007
6 RAID 0 (Stripe) 2048 MB SEAGATE ST32550W 0007
7 PCI SCSI JackHammer™ N/A FWB FWB PCI Slot C1 0400
Format
Partition
Mount
Unmount
Test
Power Macintosh
© 1991-1995 FWB, Inc. All Rights Reserved Worldwide.
Macintosh HD
RAID 0 (Stripe)
RAID 1 (Mirror)
SledgeHammer3500FM
Spanning, too!
Trash

To increase storage performance, users can implement RAID levels 0 and 1, for data striping and mirroring, respectively, in FWB's RAID Toolkit.

To increase either the performance of a storage device or the safety of the data that resides on it, software RAID is the most economical solution available. What makes it less expensive is that it can use many of the hard drives you already have.

But not all RAID systems allow you to use your own hard drives; some come bundled with drives, a hardware- or software-based controller, a SCSI accelerator, and an enclosure to contain everything. These turnkey RAID systems are convenient and effective. But for real economy, consider creating your own RAID using software and virtually any hard drives.

Using software-based RAID is the least expensive way to help storage performance.

For software-based RAID levels 0 and 1, there are a few disadvantages when compared to hardware-based systems. It isn't plug-and-play. But anyone with a modicum of Mac experience and about an hour to devote to the job can have a fully functional RAID system for only a few hundred dollars more than the cost of the hard drives.

If anyone is a perfect candidate for software-based RAID, it's Chris Smith, systems manager at the office of instructional development at George Mason University in Fairfax, Va.

His department helps develop computer-aided educational programs, and he does a lot of digital video editing. But even with his Power Mac 8100, reads and writes to the hard drive were problematic. Smith often experienced dropped frames and poor sound playback. So he decided he needed the performance boost offered by data striping in RAID Level 0, in which data is spread over two drives.

A hardware turnkey solution was certainly a possibility, but he had a good reason to opt for FWB Inc.'s RAID Toolkit, a software-only product. "With software RAID, we save on costs," he said.

If you go shopping for software RAID, however, you'll find surprisingly few choices. These include ExpressStripe and ExpressMirror from ATTO Technology Inc.; SoftRAID from Conley Corp.; Remus, which supports RAID levels 0, 1, 4 and 5, and Remus Limited, which supports RAID levels 0 and 1, from Trillium Research Inc.; RAID Toolkit from FWB; and Anubis RAID, which is part of the Anubis Professional Storage Suite from CharisMac Engineering Inc. Apple's offering, AppleRAID, is a version of SoftRAID that works only on PowerPC-based Workgroup Servers. Conley's product also works on Quadra machines.

While there are significant differences among the products, their similarities are also striking. The most important similarity, the one that encourages people to buy them, is that they accept virtually any hard drive you have. "You'll always save money when you shop for your own hard drives rather than take the one bundled with a RAID system," said Gary Straub, network administrator at Rapid Laser Graphics Inc., a San Francisco-based pre-press service bureau that uses Remus for Level 0 RAID. The company's primary application is Adobe Photoshop, and Straub said that Remus gives him "a performance boost, which makes Photoshop a lot more manageable."

While most Mac-based RAID systems use hard drives, it's good to have a choice of media. Besides hard drives, Remus supports magneto-optical and SyQuest drives. And Anubis RAID also works with SyQuest, floptical, Bernoulli and optical drives.

Don't forget SCSI

Accelerating drive performance through striping may or may not provide the performance benefit you hoped for — it depends on whether the drive or the SCSI bus is creating the bottleneck. For example, when the publishing department of a New York-based brokerage firm, which declined to be identified, purchased Remus to create a dual-drive Level 0 RAID system, performance picked up only marginally.

The problem was solved when the company added a JackHammer Fast and Wide SCSI-2 board from FWB. The firm's Mac support manager said: "The original SCSI couldn't keep up with the RAID system. It took us a while to diagnose the problem."

Support for SCSI accelerator boards is one way the software RAID products distinguish themselves. At present, RAID

See Solutions, next page

Next stop for performance: RAID Level 5

RAID Level 5 overcomes the 100 percent redundancy of Level 1 by striping recovery information over all the disks in the array. If any single disk goes down, the recovery data can be used to reconstruct that data. RAID 5 is also more economical than RAID 3 because the latter dedicates one or more disks to the recovery information.

If that were the only difference between levels 3 and 5, RAID 5 would all but eliminate Level 3 (as it virtually did to Level 4). But there is a second difference, one that makes Level 3 a better choice for some users. In Level 3 the logical record is broken up and interleaved over all the data drives. With Level 5, the logical records are stored complete on individual disks. Accordingly, if you're accessing small bits of information, such as in a database query or on-line transaction processing operation, a Level 5 system has to access only a single disk. This speeds the read process. But Level 3 is better for large file transfers, which are necessary for multimedia applications. This is because the large files are spread over multiple disks that spin synchronously and so can work together to send the file to the CPU.

Micropolis Corp. of Chatsworth, Calif., said it has a proprietary caching technique that solves the problem of the performance disadvantage Level 5 has compared to Level 3 for multimedia files. It calls its RAIDion disk array Level 5+, although that level hasn't been recognized by the RAID Advisory Board. Micropolis is not alone, however; some other high-end RAID systems let users add large RAM caches to their arrays to improve Level 5 performance.

Another advantage of some Level 5 systems is a hot-swap feature, which allows drives to be replaced without taking the server down. More important for companies that leave their server unattended for periods of time is a hot-spare feature, which allows you to include an extra disk in the array. If a drive fails, the system automatically reconfigures itself, including the spare disk in the new array. Several hardware-based RAID systems have hot-spare and hot-swap features: the COREarray series from AIWA America Computer Systems Division; the Sledgehammer FT from FWB Inc.; the MX/500 RAID storage system from Mega Drive Systems Inc. of Beverly Hills, Calif.; the HotSwap Tower RAID system from Optima Technology Corp. of Irvine, Calif.; and RAIDBank Professional from MicroNet Technology Inc., also of Irvine.

While most turnkey RAID 5 solutions are hardware-based, ARRAID from APS Technologies Inc. of Kansas City, Mo., and RAIDBank Professional from MicroNet use software RAID controllers. These reduce the cost of the RAID system dramatically. Software-based systems, however, make heavy use of the host processor and, therefore, are not a reasonable choice for servers that are running at or near capacity. — By Larry Stevens

MACINTOUCH RIC FORD

Printing package is easier to find than Microsoft fix

Apple's Color LaserWriter brought with it an official release of the new LaserWriter 8.3 printing package (see MacWEEK June 12, Page 38). The new set of three floppy image files is available on the Internet and on other on-line services, in addition to eWorld. Meanwhile, readers have reported both successes and problems with the new software.

Microsoft's Type 11 fix is hidden in a directory filled with cryptic DOS files.

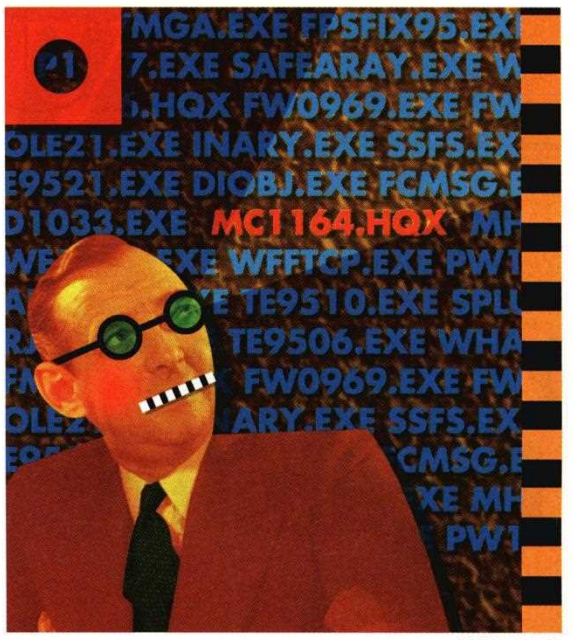
A common complaint with Desktop PrintManager (part of the LaserWriter 8.3 package) is that users can no longer disable manual-feed printing dialogs through a Preferences menu. This can create an annoying situation that forces the user to run back and forth between the printer and the computer, which may not be located close to each other.

Several people also reported problems downloading and opening the floppy image files, but these glitches appear to have been corrected in the Internet directory at ftp://ftp.support.apple.com/pub/apple_sw_updates/us/macintosh/printing_sw/laser_sw/. Apple has also distributed versions of LaserWriter 8.3 on its developer CD-ROMs.

Jon Carr, an Apple sales representative at the University of Maine at Orono, reported success using Desktop PrintMonitor with other types of printers, including serial and LocalTalk ImageWriters and a StyleWriter 2400. Carr also printed to the older LaserWriter 7.1.2 driver with Desktop PrintMonitor.

Several readers complained about aspects of the new user interface, which still has quirks and problems despite its make-over. Since users commonly print from an application menu, the new drag-and-drop feature of printer icons on the desktop are of limited use. People are looking, instead, for richer capabilities in the Print dialog, where it would be nice to have something like a pop-up menu of your printers. The Desktop PrintMonitor's system for switching printers is awkward: You select a printer icon on the desktop, choose Set Default Printer from the Finder's Print menu, then switch back to your application and print.

Programmer Neil Mickelson recently released Version 3.0 of his freeware LaserWriter 8 Patch utility. LaserWriter Patch 3.0 tweaks a copy of your LaserWriter 8.2.2, LaserWriter 8.2.2f (fax version) or LaserWriter 8.3 driver to allow selecting printer descriptions when you are not connected to a printer. It also adds more "n-up" printing options (for imaging multiple pages on one sheet of paper). You can reach Mickelson at mickelsn@uiuc.edu, and the utility is available from standard on-line sources.



GORDON STUDER

Land of DOS

Microsoft Corp. finally identified and addressed one source of Power Macintosh crashes, although no pattern has emerged from all the other reports of crashes on these machines.

A Microsoft extension, Office4.2x Update for Power Mac, installs patches to prevent Type 11 errors that occur after using and quitting PowerPC-native versions of Word 6.0 and 6.0.1. It also tackles freezes triggered by printing from Word 6 and Excel 5.0 or 5.0a when QuickDraw GX is running.

Microsoft's on-line support system is about as friendly as Windows for Macintosh users, but readers helped me locate the fix at ftp://ftp.microsoft.com/softlib/mslfiles/mc1164.hqx. (The cryptically named Mac file is dumped in a single directory with more than 1,000 DOS and Windows files.)

While you are wandering through Microsoft's support maze, you might want to snag a copy of documents Q125956 and Q123150 in its Knowledge Base database. These two documents describe the files that Microsoft places in the Mac's System folder and the situations in which they are installed, which should be helpful for troubleshooting.

PCI Mac patch

Dantz Development Corp. released Retrospect 2.1 Updater when the Power Macintosh 9500 arrived. The free patching utility updates Retrospect to Version 2.1A+ for compatibility with the PCI-based Macs. It also addresses a compatibility issue with start-up volumes larger than 2 Gbytes, possible only with System 7.5 and later.

The updater is available from standard on-line services, including the Info-Mac file library mirror site at ftp://mirrors.aol.com//pub/info-mac/disk/retrospect-21-updt.hqx and in ZiffNet/Mac's Download and Tech Support Forum (go zmc:downtech), where it is file retrosup.sit in the Commercial Updaters library. □

Comments on MacInTouch are welcome at 7 Parmenter Ave., Maynard, Mass. 01754. Phone (508) 897-2621. Please address e-mail to 72511,44 on CompuServe or ricford@macintouch.com on the Internet. The MacInTouch home page is at http://www.macintouch.com/~ricford/.

SOLUTIONS

From previous page

Toolkit and Anubis RAID can be used only with the JackHammer. ExpressStripe requires one or more of ATTO's SiliconExpress SCSI-2 accelerator cards to be installed. According to a representative of Conley, the company has not yet determined which, if any, SCSI accelerators its SoftRAID will work with. Remus is compatible with most SCSI accelerator cards, including those from ATTO and FWB.

You probably won't need a SCSI accelerator if you're interested in using the software for RAID Level 1. That's because unlike RAID Level 0, which speeds up hard drive performance, RAID Level 1 may actually slow down drive performance somewhat.

RAID Level 1 is not meant to boost performance but to protect data. It does so by duplicating, or mirroring, all your writes onto a second drive. Many of the people who opt for RAID Level 1 are those coming off of mainframe or midrange systems, where fault tolerance is an essential part of the system. Jack Rosenzweig, editorial products manager at Baseview Products Inc. of Ann Arbor, Mich., integrates Mac-based systems for small-circulation newspapers. He said his clients typically replace a roomful of outdated proprietary hardware with a single Power Mac server. That surprises them. "And the second surprise is how cheaply they can replicate the mirroring they had on their old systems using software-based RAID 1," he said. Rosenzweig often installs AppleRAID, which he says is the easiest software-based RAID to install.

Beyond Level 1

All RAID software support levels 0 and 1, although ATTO separates that support into two products: ExpressStripe for Level 0 and ExpressMirror for Level 1. None support Level 3. And if you want levels 4 or 5, your options have dwindled to one: Remus.

There are a number of advantages to levels 4 and 5. Unlike levels 0 and 1, which provide either better performance or fault tolerance, levels 4 and 5 provide both. And RAID 4 and 5 are more economical than Level 1. This is because you don't need 100 percent redundancy.

Rather than having two drives providing the capacity of one, Level 4 and Level 5 systems may use, for example, six drives to provide the capacity of five.

But you should think twice before investing in a software-based RAID Level 4 or Level 5 system. Both levels use a process in which data on a failed drive is re-created and saved on an extra drive (Level 4) or striped on all the drives (Level 5). Creating the data requires a lot of computation, and so makes strong demands on the host processor. By contrast, hardware-based RAID level 4 and 5 systems include a hardware controller (CPU and memory), which handles the computation. Another disadvantage of software-based RAID Level 5 is that it doesn't, at least so far, provide the hot-spare feature found in many hardware-based RAID 5 systems (see story, previous page). □

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US West stays competitive with flat-file database

By Larry Stevens

FileMaker Pro lets the support team prototype interfaces for new customer services.

A commonly heard rule of thumb is if you're a small-to-medium-sized business, you can run it using a flat-file database management system such as FileMaker Pro from Claris Corp.; larger corporations would require relational systems such as 4th Dimension from ACI US Inc. So it may come as a surprise that telecommunications giant US West Communications Inc. of Englewood, Colo., was able to solve a major problem using FileMaker Pro.

The problem is one common to virtually all corporations in which programmers create systems for their in-house clients. "It was very difficult for the clients to explain to the programmers what they needed and wanted in a system," said Mark Ewell, a Unix system administrator and Mac integrator at US West. "So we had to go through a number of revisions before any project was finally rolled out."

The systems Ewell described support new services that US West sells to its telephone customers. In the past, the company might labor for three to five years to develop and introduce new telecommunications services. Therefore, systemization support could also be developed at a leisurely pace. But increased competition in the telecommunications industry called for more aggressive time schedules. Now new services are created in six months, and systems to support them must be put in place even faster.

Kinds of services

According to Ewell, these services distinguish US West from its competition, and, thus, they represent an important part of the company's strategic direction.

For example, the Single Number service was created for a national pizza chain: It allows a company to advertise a single national toll-free number, which rings at the store nearest the home of the dialer. There is also the Find Me service, which lets customers specify at various times an alternative phone number to which their calls can be routed; for instance, if there is no answer at one number, calls can be routed to another number. And there is Do Not Disturb, in which only authorized callers can ring a telephone at specified times.

When customers sign up for these services, customer service representatives have to fill in screens of data. And the corporate support team is responsible for training and providing technical support to those representatives. So it's reasonable that members of the support team help create the user interface for the programs they'll have to support. The clearer the screen boxes and prompts, the more efficient everyone will be.

In theory, it should be relatively simple. The corporate support team members explain to programmers how the screens should look, and the programmers do the coding. But misunderstandings do arise, and more often than not nonprogrammers simply don't know what they like and dislike until they see it working.

Enter prototyping

That's where the Advanced Intelligent Network, Future Methods of Operation Prototype laboratory comes in. The laboratory helps programmers and their in-house clients communicate better.

Since manufacturers make good use of prototyping, the support team thought that the same process could aid them as well. The lab, which is outfitted with Power Macs, mostly 6100s, purchased a 50-user site license for FileMaker Pro. It uses FileMaker Pro to create prototypes of the proposed programs. The mock-ups contain all the screens and even some of the logic of the actual program the corporate users wanted developed.

The reason for choosing FileMaker Pro for the job is simple. "It wouldn't be reasonable to expect corporate users to learn to program in X Window," Ewell said. "But FileMaker is another story. We didn't even have to teach people how to use it. They just dug in and learned it on their own."

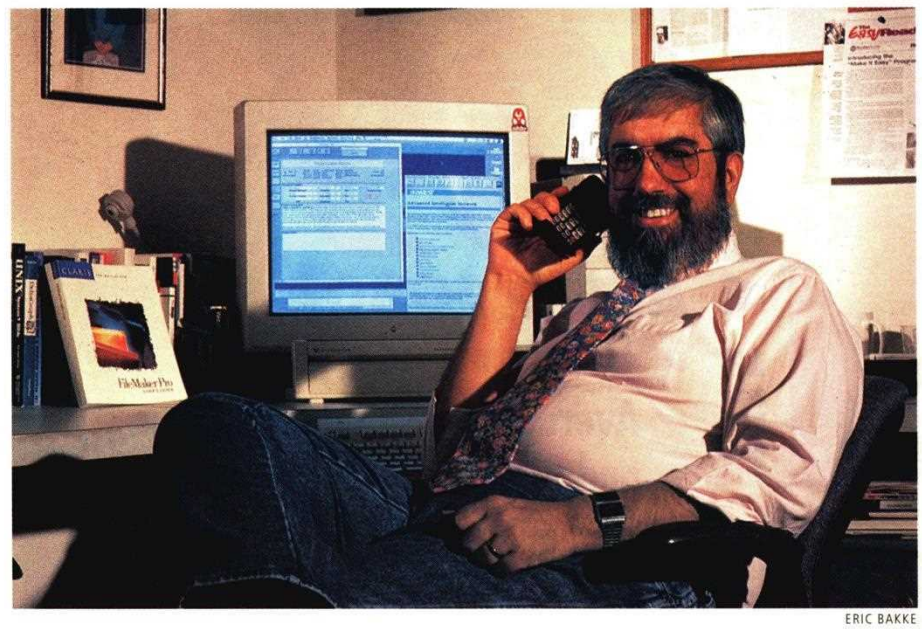
Now corporate support team members and others at US West work with FileMaker Pro until they're satisfied with their working model. Next they present that model to programmers, who build the code in the actual program. The result is that the number of iterations has been reduced, sometimes to one. And the company is able to create systemization support for new services in months rather than years.

The lab has also found FileMaker Pro useful for all of its internal database requirements, such as vacation and time-off planning, emergency control, and even tracking orders for new services.

There is a limit

This last application, however, is beginning to strain the limits of FileMaker Pro. In terms of logic and features, the program is up to the task, but the size of the database slows it down. "I expect that we've taken [FileMaker Pro] as far as we can in terms of the sheer volume of daily orders we receive," Ewell said. However, before he invests in a relational database management system, he wants to see what the upcoming relational version of FileMaker Pro looks like.

But even if Ewell moves to a new database management system for tracking orders, he'll continue to use FileMaker Pro for prototyping. "It plays an important part in reducing the time to market," he said. "It's very easy. We don't plan to move off it anytime soon. □



ERIC BAKKE

Mark Ewell, a system administrator for Macintosh integration at US West, says quick turnaround in service keeps the company ahead of the competition.

US West

ENGLEWOOD, COLO.

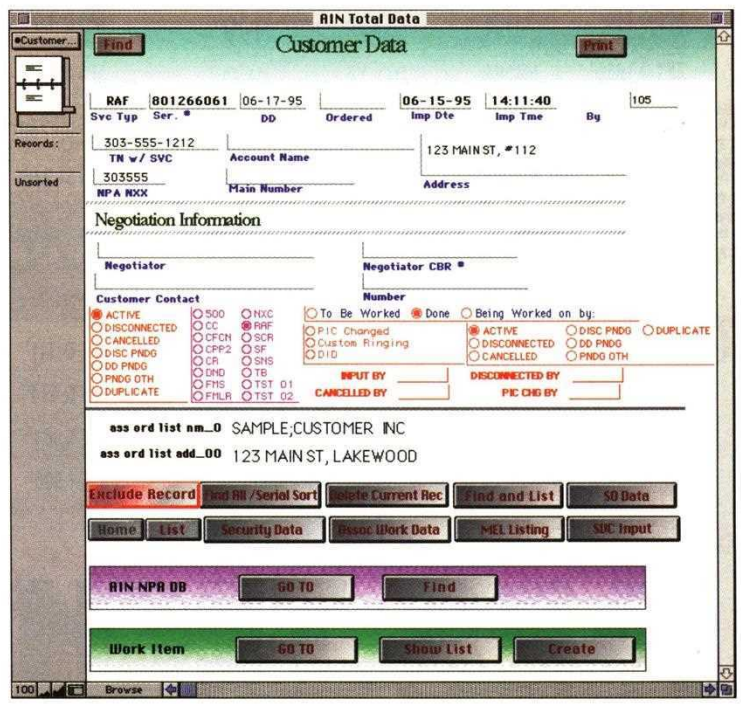
PROBLEM: Creating systemization support for new services took too long.

SOLUTION: Use FileMaker Pro to prototype user interface for systems.

RESULT: Users can create their own mock-ups of the system they want programmers to create. Programmers have a clear understanding of concept and design.

COST: About $12,000 for a 50-user site license.

BENEFITS: Fewer program revisions, sometimes no revisions needed at all.



Corporate clients at US West use FileMaker Pro to create mock-ups of screens they want included in programs. After creating the customer data screen, it is sent to the programming department, which codes it using the X Window System.

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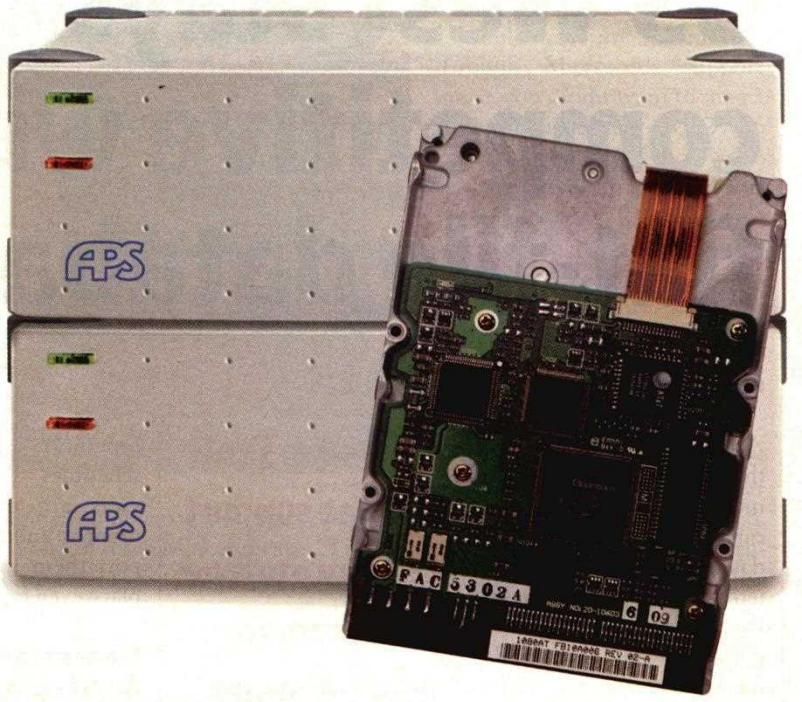

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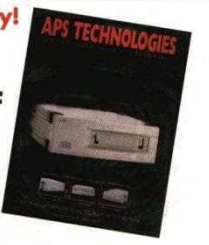

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- ✓ Includes Retrospect v 2.1 FREE!
- ✓ 2-year warranty

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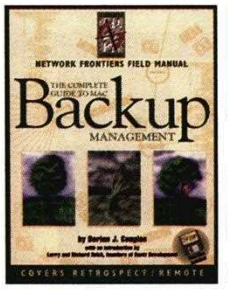

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APS TAPE DRIVES

Model	Capacity*	Internal	External
APS HyperTape[2]	2GB+	—	$499.95
APS DAT[2][2]	4GB+	$749.95	799.95
APS HyperDAT[2]	8GB†	949.95	999.95
APS DLT40[2]	40GB†	—	NEW FROM APS 5499.95

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*Actual data compression and tape capacity vary greatly depending on the type of data recorded, other system parameters and environment.
† 2:1 Hardware data compression.
✚Native capacity without data compression.
All APS DAT, DLT & HyperTape drives include Retrospect by Dantz

Tape Media	*1-4*	*5-19*	BEST VALUE! *20+*
3080XLF (HyperTape)	*$34.95*	*$32.95*	*$31.95*
60-Meter	*7.95*	*6.95*	*5.95*
90-Meter	*9.95*	*8.95*	*7.95*
120-Meter (DDS-2)	*19.95*	*18.95*	*17.95*
DLT20 Data cartridge	*45.95*	*—*	*—*
DLT40 Data cartridge	*109.95*	*—*	*—*
DLT20 3PK cartridges	*119.95*	*—*	*—*
DLT40 3PK cartridges	*299.95*	*—*	*—*

APS REMOVABLE DRIVES

Model	Capacity	SR2000
APS SQ 3270[2]	255MB	MacUser ZD LABS ★★★★ $479.95
APS SQ 5200[2]	194MB††	MacUser ZD LABS ★★★★½ 499.95

†† Does not format 44MB & 88MB cartridges
1-5 Denotes length of manufacturer's warranty in years
All SyQuest drives include 1 FREE cartridge

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SyQuest Media	*1-4*	*5-9*	BEST VALUE! *10+*
SQ-400 (44MB)	*$44.95*	*$43.95*	*$41.95*
SQ-800 (88MB)	*54.95*	*53.95*	*51.95*
SQ-2000 (200MB)	*84.95*	*83.95*	*81.95*
SQ-310 (105MB)	*59.95*	*58.95*	*56.95*
SQ-327 (270MB)	*64.95*	*63.95*	*61.95*

Prices listed are for unformatted media

APS CD-ROM DRIVES

Model		SR2000
APS T 3601[1]	QUAD-SPEED	$349.95

APS MO DRIVES

Model		SR2000
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APS 1.3GB MO[1]	*New 4MB cache*	1799.95 NEW FROM APS

1-5 Denotes length of manufacturer's warranty in years
All MO drives include 1 FREE cartridge

MO Media	*1-4*	*5-9*	BEST VALUE! *10+*
128MB cartridge	*$27.95*	*$26.95*	*$22.95*
230MB cartridge	*39.95*	*38.95*	*34.95*
1.3GB cartridge	*89.95*	*88.95*	*84.95*

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- All external drive products and cases come with a premium 25 x 50 SCSI cable.
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""I tried...Direct Connections...configurations without encountering any problems" **Video Pro April '95**
"This array is the one to beat." **Ken Grey** Writer for WIRED, Computer User, MovieMaker, Computer Video, and Digital Video Magazine.
"Stick with a vendor such as Direct Connections that understands how to prepare a RAID for desktop video." **MacWorld April '95**

HARD DRIVES

Seagate Elite 9 9gig. $2595.

240MB - 1200MB

BRAND/MODEL	CAPACITY	SIZE	ACCESS	RPM	INTERNAL	EXTERNAL
QUANTUM	514MB	2.5"	14MS		$ 425	
FUJITSU M2684S	530MB	3.5"	13MS	5400	$ 209	$ 269
NEC	730MB	3.5"	11MS	4090	$ 239	$ 299
CONNER CFP1080S	1.2GIG	3.5" LP	9MS	5400	$ 455	$ 515
Hitachi DK326c-10	1.0GIG	3.5"	9MS	6300	$ 535	$ 595
FUJITSU M1606S	1.2GIG	3.5" LP	10MS	5400	$ 415	$ 475
Seagate ST31230N	1.2GIG	3.5" LP	9MS	5400	$ 585	$ 645

1.7GIG - 9GIG

5 YEAR WARRANTY

BRAND/MODEL	CAPACITY	SIZE	ACCESS	RPM	INTERNAL	EXTERNAL
Seagate ST12450W	1.7GIG	3.5"	8MS	7200	$ 1495	$ 1555
Conner CFP2105S	2.1GIG	3.5" LP	9MS	5400	$ 835	$ 895
Conner CFP2107S	2.1GIG	3.5" LP	8MS	7200	$ 955	$ 1015
Quantum XP32150S	2.2GIG	3.5" LP	8.6MS	7200	$ 935	$ 995
Seagate Barracuda 2	2.5GIG	3.5" LP	8MS	7200	$ 1055	$ 1115
Seagate Barracuda 2W	2.5GIG	3.5" LP	8MS	7200	$ 1139	$ 1199
Seagate Barracuda 4	4.1GIG	3.5"	8MS	7200	$ 1499	$ 1559
Seagate ST15230N	4.3GIG	3.5"	9MS	5400	$ 1155	$ 1215
Conner CFP4207S	4.2GIG	3.5"	9MS	7200	$ 1295	$ 1355
Conner CFP4207wide	4.2GIG	3.5"	9MS	7200	$ 1395	$ 1455
Quantum XP34280S	4.3GIG	3.5"	8.6MS	7200	$ 1295	$ 1355
Seagate Elite 9	9.0GIG	5.25"	11MS	5400	$ 2595	$ 2695

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Yamaha 4 speed recorder

$3095

"We recommend the Yamaha CDR100"
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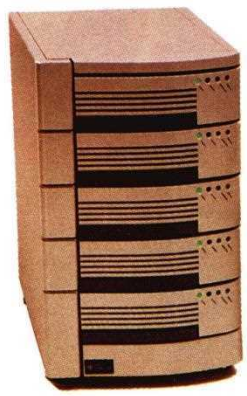
MEDIA

128MB Optical	$ 25	60M Tape	$ 10
230MB Optical	$ 29	90M Tape	$ 12
1.3GIG Optical	$ 85	112M Tape	$ 15
10 Blank CD's	$ 99	120M Tape	$ 20
88MB Squest	$ 48	200MB Syquest	$ 76
105MB Syquest	$ 54	270MB Syquest	$ 61

Our top rated RAID Systems include an Atto accelerator card, Remus RAID software, and all cabling.

RAID SYSTEMS
FROM 1 TO 84 GIG

"Stick with a vendor such as Direct Connections that understands how to prepare a RAID for desktop video." MacWorld April '95



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The New Sony 1.3GB half-height has 4MB of Cache and 3600rpm making this the fastest Optical drive in the market today! Call for comparisons against the competition.

$1949

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CAPACITY	MODEL	EXTERNAL
230MB	Fujitsu	$ 575
1.3GB	NEC	$ 1599
1.3GB	Sony 4MB cache	$ 1949
1.3GB	Ricoh Turbo	$ 2175
Sony's latest technology → 26GB	Sony Jukebox	$ 6395

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CAPACITY	MODEL	MEDIA	INTERNAL	EXTERNAL
1.3-2GIG	DC DAT	4MM	$ 709	$ 769
1.3-4GIG	DC DOUBLE DAT	4MM	$ 839	$ 899
4.0-8GIG	Sony 5000 DDS-2	4MM	$ 939	$ 999
7.0-14GIG	Exabyte 8505XL	8MM	$ 2135	$ 2195
-32GIG	Conner Autoloader	4MM		$ 2475
-40GIG	DLT4000	1/2"		$ 4999
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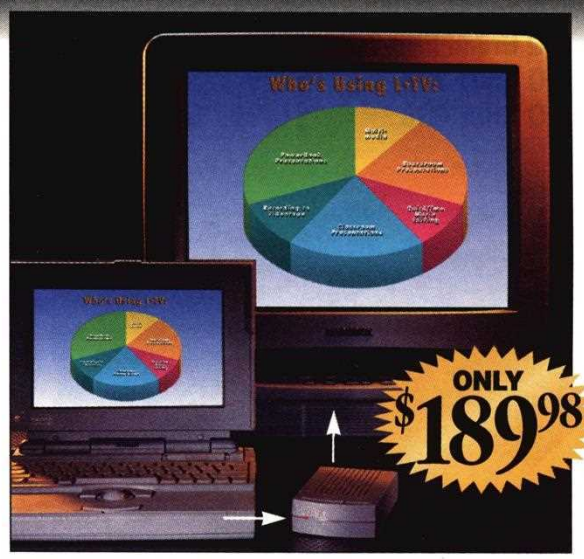

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- Standard Apple DB-15 video connector

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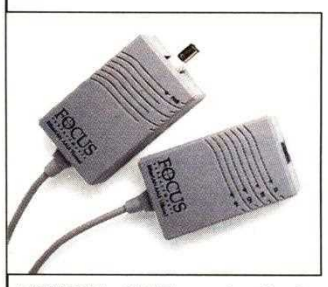

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Mac II (NuBus)	EtherLAN A1-II	ThickThin/10Base-T	*#94208*	$104.98
Mac IIsi & SE30	EtherLAN A1-IIsi & SE30	Thick/Thin/10T	*#94209*	$169.98
Mac SE	EtherLAN A1-SE	Thick/Thin/10T	*#94210*	$164.98
Mac LC	EtherLAN LC	Thin	*#94211*	$79.98
Mac LC	EtherLAN LC-T	10Base-T	*#94212*	$74.98
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All Macs w/SCSI	EtherLAN SC-T	10Base-T	*#90829*	$199.98
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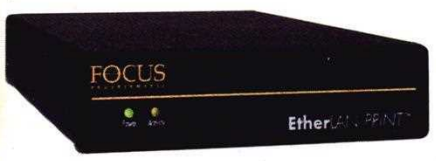

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#94205 **EtherLAN Print Plus** $344.98

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EtherLAN Hub9

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#90813 **EtherLAN Hub16** $389.98

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TurboNet LocalTalk connectors improve and maintain the signal quality of your network. Features two LED traffic indicator lights. Connects with a Din-8 and two RJ-11 ports so you can daisy chain hardware. FOCUS Enhancements. ***#90808***

#90809 **TurboNet 10-pack** . . . $119.98 ***#90810*** **TurboNet 50-pack** . . . $499.98
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Q Atlas 2GB	$999	$1099
Q Atlas 4GB	$1499	$1599

$379! Including Cartridge!

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Spin's 230MB removable cartridge drive is a premium storage solution for DTP and graphics users. Five year warranty and one cartridge included.

Bernoulli 230MB	$379
Single Cartridge	$89
3-Pack	$199

Retrospect backup software included.

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DAT Drives

Spin DAT drives are the flexible backup solution for all types of users. Store up to 8GB of data on one inexpensive tape. One cartridge included.

Spin 3100 (DDS)	$799
Spin 3200 (DDS-DC)	$899
Spin 3400 (DDS-2)	$999

QuickTape

Back up your small business and home systems in minutes with QuickTape. Includes a 1GB QIC-WIDE cartridge and backup software.

QuickTape	$499
Cartridge	$19

230MB Only $599 Two Cartridges Included!

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Backup or archive your valuable Photoshop™, QuarkXPress™, Excel™, Word™, and database files for years with Spin Magneto-Optical drives. Maxoptics 1.3GB includes one cartridge.

Olympus 230MB	$599
Cartridge	$39
Maxoptix T4 1.3GB	$1999
Cartridge	$85

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CAPACITY	DRIVE	CARTRIDGE
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44/88MB	$339	$48
200MB	$479	$75
105MB	$249	$56
270MB	$479	$65

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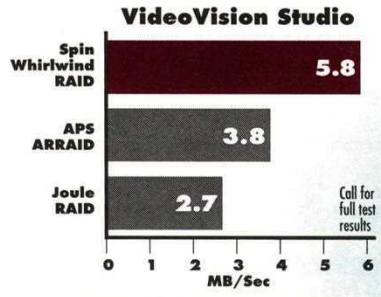

Whirlwind RAID

Video and server applications need the power of our Fast/Wide Whirlwind RAID. ATTO Silicon Express IV and Remus RAID software included.

CAPACITY	RAID 0,1	RAID 0,1,4,5
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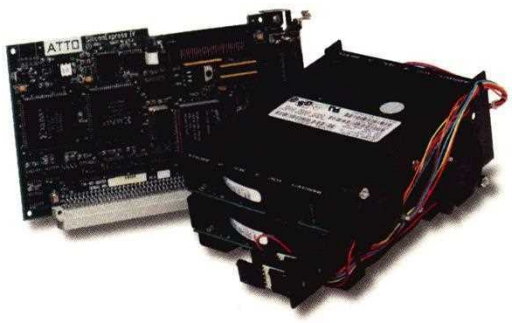

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Fast/Wide RAID that fits inside your 800, 840AV, PowerMac 8100, or Workgroup Server 80 and 8150. ATTO SE IV and Remus RAID software included.

CAPACITY	RAID 0,1	RAID 0,1,4,5
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4GB	$3799	$3999

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Spin 2.5" drives are fast, easy to install, and offer the capacity you need when you are on the road.

Quantum 170MB	$179
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Whirlwind

Whirlwind Fast/Wide drives are for graphics and other users who need superior throughput but not the horsepower of our Whirlwind RAID system.

1GB Seagate Barracuda	$999
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ATTO SE IV with drive purchase	$895

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CAPACITY	INTERNAL	TORNADO
Trailblazer 420MB	$189	$289
Fireball 540MB	$219	$319
Trailblazer 840MB	$269	$369
Fireball 1.0GB	$499	$599

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SONY CDU55 — 235/275
280ms access time, 300Kb/sec transfer rate

NEC 2VMac — 205/245
320ms access time, 300Kb/sec transfer rate, 1 Year Warranty

NEC 3Xp — na/398
240ms access time, 500Kb/sec transfer rate, 1 Year Warranty

Toshiba QuadSpeed — 340/380
120ms access time, 600Kb/sec transfer rate, 256K,1 Year Warranty

NEC 4Xe — 445/485
220ms access time, 600Kb/sec transfer rate,256K,1 Year Warranty

Plextor 4Plex — 385/425
235ms access time, 600Kb/sec transfer rate, 256K,1 Year Warranty

Plextor 6Plex — 555/615
235ms access time, 600Kb/sec transfer rate, 256K,1 Year Warranty

Kingston TECHNOLOGY CORPORATION

Removable Drive Carriers

- Provides ability to easily remove and transport data
- Ideal for disk array environments
- Compatible with single ended, narrow differential, or fast & wide SCSI disk drives
- SCSI ID select number is clearly displayed on front panel of the receiving frame
- Key locked to prevent unauthorized or untimley removal of the drive carrier
- 5 year warranty

"Kingston Data Silo's are ideal for enclosing 5.25" and 3.5" storage devices, including disks, tapes, DATs or optical drives for external SCSI expansion". Kingston Technology Corp.1994

Digital Linear Tape Drives

Quantum DLT

Model	Capacity	Trans.Rate	Media	Ext.
DLT2000	20 GB	2.5MB/sec.	DLT20	$3995
DLT4000	40 GB	3.0MB/sec.	DLT40	$Call!

1 free cartridge with each DLT purchase

These drives are ideal for AV and network backup due to their advanced linear recording technology and a highly accurate tape guide system . DLT allows you to backup 150 to 180 MB per minute. DLT is your high capacity high performance backup solution.

Optical Drives

	Capacity		Access	Warranty	Ext.
Hewlett Packard	1.3 GB	1716T	23.5ms	1 Year	2295
MaxOptics	1.3 GB	Tahitti III	18ms	1Year	2395
Fujitsu	230 MB	M2512	30ms	1Year	575

1 free cartridge with each drive purchase

Hard Drive Cabinets

Zero Footprint 10.75" x 9.75" x 2"..... $75
MicroCab 8.5" x 6.75" x 2"..... $85
Full Height 9.75" x 9.5" x 4.5"..... $135
Multi Bay Cabinets..... $CALL
Two, four, six, and eight bay cabinets available. All cabinets come with a 25-50 pin Mac system cable and a power cable. 1 year warranty on all cabinets.

Scanners

Nikon	Scantouch	$1299
	Transparency Adapter	$599
	Coolscan	$1499
UMAX	UC630/1260	$675/1240
	Vista S6	$760
	Powerlook	$3250

All prices are subject to change without notice. Returned products are subject to a restocking fee. International customers pay all shipping charges. All shipping charges are non-refundable. To return merchandise call for an RMA number. All RMAs must be returned within 10 business days of issuance. Customers are responsible for all returned product shipping charges.

VISA MasterCard

Business Hours
8:00am-7:00pm (CST)

NEW Quantum Quantum Quantum

	Capacity	Seek	RPM	Cache	Warranty	Int.	Ext.
LPS Series	170 MB	14 ms	3600	128K	2 Year	135	195
Lightning	365 MB	11 ms	4500	128K	2 Year	155	215
Trailblazer	420 MB	14 ms	4500	128K	3 Year	185	245
DSP3053	535 MB	9 ms	5400	512K	2 Year	225	285
Maverick	540 MB	14 ms	3600	128K	2 Year	190	250
Fireball	540 MB	11 ms	5400	128K	3 Year	195	255
Lightning	730 MB	11 ms	5400	128K	2 Year	255	315
Trailblazer	850 MB	14 ms	4500	128K	3 Year	275	335
Fireball	1080 MB	11 ms	4500	128K	3 Year	395	455
Empire	2100 MB	9.5 ms	5400	512K	5 Year	890	950
Capella	2.0 GB	8.5ms	5400	1024K	5 Year	795	855
Atlas Series	2.0 GB	9ms	7200	1024K	5 Year	925	985
Grand Prix	4200 MB	8.6 ms	7200	512K	5 Year	1095	1155
Atlas Series	4.3 GB	9ms	7200	2048K	5 Year	1495	1555

	Capacity	Size	Seek	Cache	Warranty	Int.	Ext.
Daytona	256 MB	Powerbook 2..5"	17 ms	128K	1 Year	215	275
Daytona	341 MB	Powerbook 2..5"	17ms	128K	1 Year	295	355
Daytona	514 MB	Powerbook 2..5"	17 ms	128K	1 Year	385	445

New Products MICROPOLIS MICROPOLIS New Pricing!!

	Capacity	Access	RPM	Cache	Warranty	Int.	Ext.
M4221	2.1 GB	8.5 ms	7200	512K	5 Year	895	955
M4221Wide	2.1 GB	8.5 ms	7200	512K	5 Year	1080	1140
M1936	3.6 GB	11 ms	5400	512K	5 Year	1195	1295
M3243	4.3 GB	8.5 ms	7200	512K	5 Year	1385	1445
M3243Wide	4.3 GB	8.5 ms	7200	512K	5 Year	1475	1535
M1991	9.0 GB	12 ms	5400	512K	5 Year	2195	2295
M1991Wide	9.0 GB	12 ms	5400	512K	5 Year	2295	2395

Direct to Disk Recording AV Drives- BEST for Music and Video Storage

M4221AV	2.1 GB	8.5 ms	7200	512K	5 Year	995	1055
M1936AV	3.6 GB	11 ms	5400	512K	5 Year	1245	1345
M3243AV	4.3 GB	8.5 ms	7200	512K	5 Year	1485	1545
M1991AV	9.0 GB	12 ms	5400	512K	5 Year	2325	2425
M4221WideAV	2.1 GB	8.5 ms	7200	512K	5 Year	1135	1195
M3243WideAV	4.3 GB	8.5 ms	7200	512K	5 Year	1595	1655
M1991WideAV	9.0 GB	12 ms	5400	512K	5 Year	2495	2595

NEW MICRODISK LT *3.5"Stackable Disk Subsystems, Super Capacity External Storage*

M2100	2.1 GB	8.9 ms	7200	512K	5 Year	Call for the most
M4200	4.3 GB	8.9 ms	7200	512K	5 Year	competitive pricing

SPRING SPECIALS

Quantum 170MB.....Int. $135 Ext. $195
3600RPM, 14ms seek, 128K cache, 2 year warranty

Quantum 365MB.....Int. $155 Ext. $215
4500RPM, 11ms seek, 128K cache, 2 year warranty

Quantum535MB.....Int. $225 Ext. $285
DSP3053, 5400RPM, 9ms seek, 512K cache, 2 year warranty

Quantum Trailblazer 850MB.....Int. $275 Ext. $335
QTB850, 4500RPM, 14ms seek, 128K cache, 3 year warranty

Quantum Fireball 1.0GB.....Int. $395 Ext. $455
QFB1080, 4500RPM, 11ms seek, 2 year warranty

Micropolis 2.0GB.....Int. $895 Ext. $955
M4221,7200RPM, 9ms seek, 5 year warranty

Seagate Barracuda 4.0GB.....Int. $1495 Ext. $1555
ST15150N, 7200RPM, 8ms seek, 5 year warranty

Seagate Seagate Seagate Seagate

	Capacity		Seek	RPM	Cache	Warranty	Int.	Ext.
Hawk 2LP	1.2 GB	ST31230N	9ms	5400	512K	5 Year	535	595
Hawk 4	4.2 GB	ST15230N	9ms	5400	512K	5 Year	1185	1245
Barracuda 2LP	2.5 GB	ST32550N	8ms	7200	1024K	5 Year	1050	1110
Barracuda 4	4.2 GB	ST15150N	8ms	7200	1024K	5 Year	1495	1555
Barracuda 2Wide	2.5 GB	ST32550Wide	8ms	7200	1024K	5 Year	1125	1195
Barracuda 4Wide	4.2 GB	ST15150Wide	8ms	7200	1024K	5 Year	1590	1650
Elite 9	9.0 GB	ST410800N	11ms	5400	512K	5 Year	2595	2695

FUJITSU FUJITSU FUJITSU FUJITSU FUJITSU FUJITSU

	Capacity	Seek	RPM	Cache	Warranty	Int.	Ext.
M2684	530 MB	9ms	4500	256K	5 Year	205	265
M1606SA	1.2 GB	9ms	4500	512K	5 Year	495	555

HEWLETT PACKARD HEWLETT PACKARD HEWLETT PACKARD HEWLETT PACKARD HEWLETT PACKARD

	Capacity	Access	RPM	Cache	Warranty	Int.	Ext.
C3724SE	1.2 GB	9.5 ms	5400	512K	5 Year	550	610
C2490SE	2.4 GB	8.5 ms	6300	512K	5 Year	1095	1155

All in Stock! SyQuest TECHNOLOGY

Capacity		Seek	RPM	Int.	Ext.
88 MB	SQ5110C	20 ms	3200	285	345
200 MB	SQ5200	18 ms	3200	405	465
270 MB	SQ3270	13.5 ms	3200	405	465

2 Year Warranty on all SyQuest Drives.
SyQuest drives come complete with 1 cartridge(Formatted or Unformatted) and the latest SCSI 4.3 compatible software

SyQuest Media

Capacity	Model	Warranty	Price
44 MB	SQ400	5 year	$41
88 MB	SQ800	5 year	46
105 MB	SQ310	5 year	50
200 MB	SQ2000	5 year	74
270 MB	SQ327	5 year	61

SCSI-2 Accelerators

Atto

Silicon Express Fast SCSI-2 — 525
SCSI 1 & 2 support,transfer rates up to 10.0 MB/sec,supports multiple block sizes,takes advantage of parallel processing capability by transferring data directly between the Mac RAM and the SCSI bus! Ideal for graphic design,multimedia applications,software design, and more!

Silicon Express 4 Card — 895
Fast/Wide (16Bit) SCSI-2 accelerator card for Apple's Nubus based computers. Supports Fast/Wide SCSI 2 (16 Bit) transfer rates up to 20MB/sec., and fast SCSI-2 (8 Bit) transfer rates up to 10MB/sec. Full 16 Bit WIDE support for the latest drives and disk arrays . Fully compatible with all existing SCSI-1 drives . Formatting software is included. 5 Year Warranty.

Remus RAID Software — Call

Tape Backup Drives

HEWLETT PACKARD

Capacity	Model	Media	Int.	Ext.
2.0 GB	35470	4mm	$935	$985
3-5 GB	35480	4mm	1105	1150
4-10 GB	1533A	4mm	1235	1295
20-50 GB	1553A Auto Tape Loader		3495	3595

Exabyte

Capacity	Model	Media	Int.	Ext.
2-5 GB	8205XL	8mm	$1395	$1485
7-14 GB	8505XL	8mm	2130	2190

Dat drives include 1 piece of media and Retrospect Software

DeskTape™ Allows you to mount your DAT on the desktop. Backing up your data is as easy as drag and drop!

ProDirect always suggests that our customers backup their hard drives. In the event of hard drive failure, be assured and back up your data with quality tape backup drives from Hewlett Packard and Exabyte.

Memory Products

Memory	Centris,LCIII,Quadra
2x8x80	4MB 60/70ns
4x8x80 60/70ns	8MB 60/70ns
4x8x80 FX	16MB 70ns
16x8x80 Low Profile	32MB 60ns
16x8x80 FX	VRAM 256K/512K

Powerbook Memory
520,520C,540,540C
4MB,8MB,16MB,32MB
140,170,160,165C,180,180C,Duos
4MB,6MB,8MB,10MB, 12MB,14MB,20MB

Lifetime Warranty on all Memory Products!!

Always call for the most competitive pricing on memory.

New ClubMac Catalog is now Available! Call 1-800-258-2622 and ask your salesperson for your FREE ClubMac Catalog subscription.

Authorized Catalog Reseller

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Newton MessagePad 100

- Manage information, stay in touch with people, and exchange data with your computer
- Send or receive electronic mail, send a fax or "beam" to another Newton MessagePad
- Newton™ Recognition Architecture recognizes both printed and cursive handwriting
- Built-in applications that include a notepad, to-do list, datebook, and name file
- Features a fast 20 MHz Processor, improved 4mb ROM and 640K RAM.

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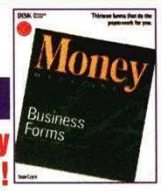


$27.95 value!

Absolutely FREE!

MONITORS & GRAPHIC CARDS

NEC

21" MultiSync XE21

- 21" diagonal flat square technology
- 13.8" Viewable image size
- Mac Res: 640 x 480 NI, 1024 x 768 NI
- Fine 0.28mm dot pitch
- Monitor Manager
- AccuColor, Digital controls
- Energy star compliant for true energy savings

$1829

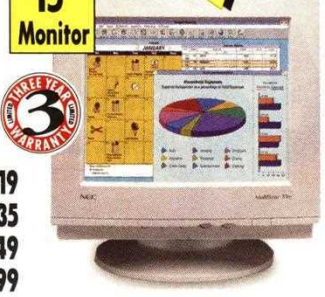
21" XE21 (N026 1010) $1829
21" XP21 (N026 1011) 2199

15" MultiSync XV15

Outstanding performance at an affordable price

- Larger sharper images that are easier to use
- Plug and Polay compatible for real performance advantages
- Energy star compliant for true energy savings
- 15" diagonal flat square technology
- 13.8" Viewable image size
- Mac Res: 1024 x 768 NI
- Fine 0.28mm dot pitch

$435



14" XV14 (N026 1016) $319
15" XV15 (N026 1015) $435
15" XE15 (N026 1006) $549
15" XP15 (N026 1005) 599

17" MultiSync XV17

Large Screen performance at an affordable price

- Perfect entry level business, small office/home office, home ducation/entertainment
- 17" diagonal flat square technology
- 15.6" Viewable image size
- Mac Res: 1024 x 768 NI
- PC Res: 1280 x 1024 NI
- Fine 0.28mm dot pitch
- FullScan capability
- On-Screen Manager

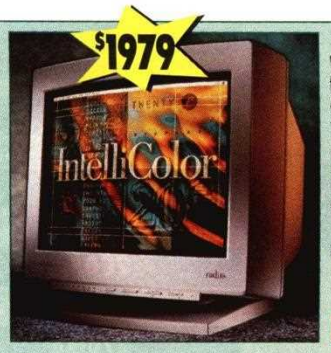
$759

17" XV17 (N026 1022) $759
17" XP17 (N026 1009) 1049

IntelliColor Display/20e

The Radius IntelliColor Display/20e is part of the next generation in professional two-page color displays. It delivers unrivaled command of your desktop, from on-the-fly resolution switching to state-of-the-art color temperature control. Combined with Radius' IntelliColor software, it allows you to emulate 3 lighting conditions and user-adjustable color temperature, so you get more accurate color representation.

$1979



MONITORS

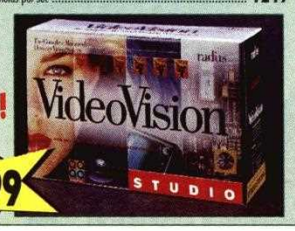
R016 1013 **PressView 21T Display System** (PV2102) 21" Trinitron, 640 x 480 to 1600 x 1200 ..... $3129
R016 1016 **SuperMatch 21•T XL Trinitron** (STD2102) 21" Trinitron, 1600 x 1200 ..... $2139
R016 1009 **IntelliColor Display/20e** (0461) 20" Trinitron, 640 x 480 to 1600 x 1200 ..... $1979
R016 1007 **PrecisionColor Display/17** (0460) 17" Trinitron, 640 x 480 to 1600 x 1200 ..... $959
R016 1030 **PrecisionView 17** (RD1705) 17" Trinitron, 1024 x 769 ..... $899

With JPEG hardware compression and decompression for full-screen, full-motion recording and playback from a hard disk, VideoVision Studio combines the power and flexibility of the Macintosh with the ease and transportability of video tape.

R013 1018 **VideoVision Studio 2.0** (0500) Compatible with the PowerMac 8100 ..... $3699
R013 1020 **VideoVision Studio 2.0** Upgrade (0505) JPEG daughtercard $1759
R013 1026 **SpigotPower AV** (DV1630) Captures full-screen 24-bit color video up to 30 frames/60 fields per sec $759
R013 1065 **SpigotPro AV** (0514) captures full-screen 24-bit color video up to 30 frames/60 fields per sec $1249

PowerMac 8100 Compatible!

$3699



Thunder Series GRAPHIC ACCELERATORS

Super Resolution at Earth-Shaking Speed.

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Thunder Series Cards Blow the doors off Power Mac

FREE* ColorComposer software

Adobe charged

Three Thunder IV GX cards extend the 24-bit resolution of the PowerMac's built-in-video. Accelerated 24-bit color, built-in Photoshop acceleration, CMYK acceleration, hot-key resolution switching, pan and zoom, color composer and 10-bit DAC add up to make these cards the number one choice for image processing, compositing and illustration.

Quadra 9500 Compatible PCI Cards NEW PRODUCT

R013 1069 **PrecisionColor 8/1600** (0529) 8-bit support to 1600 x 1200 ..... $479
R013 1071 **Thunder 30/1600** (0528) 24-bit support to 1600 x 1200 ..... $1199
R013 1070 **Thunder 30/1152** (0538) 24-bit support 1152 x 870 ..... $799
R013 1073 **ThunderColor 30/1600** (0530) 24-bit support to 1600 x 1200 ..... $1999
R013 1072 **ThunderColor 30/1152** (0531) 24-bit support 1152 x 870 ..... $1599

R013 1059 **Thunder IV GX•1600** (0513) 24-bit support to 1600 x 1200 ..... $2799
R013 1060 **Thunder IV GX•1360** (0446) 24-bit support to 1360 x 1024 ..... $2289
R013 1061 **Thunder IV GX•1152** (0485) 24-bit support 1152 x 870 ..... $1899
R013 1062 **Thunder/24 GT** (0491) 24-bit support to 1152 x 870, PhotoEngine optional $1329
R013 1008 **PrecisionColor Pro 24X** (0429) 24-bit color, 640 x 480 to 1152 x 870, 13" to 21" displays $1059
R013 1010 **PrecisionColor Pro 24XK** (0430) 24-bit color, 1024 x 768, 16" and larger displays $749

*For a limited time, FREE ColorComposer software is included with each Thunder Series card.

PRINTERS & SCANNERS

EPSON

Epson ES-1200 Pro Mac Scanning System

HIGH DETAIL 4800 DPI, 30-BIT COLOR SCANNING MADE AFFORDABLE.

- 600 x 1200 dpi scanning resolution (up to 4800 dpi via interpolation)
- Epson's TruePass scanning technology
- Scans over ONE BILLION colors
- 8.5" x 11.67" scanning area
- Built-in image processing features
- Increased image quality with 30-bit color scanning

$1269

E045 1003 **Epson ES-1200C Pro-MAC** $1269
E045 1004 **Transparency Unit** $655
E045 1008 **Automatic Document Feeder** $465

EPSON

Stylus COLOR Inkjet Printer

E047 1012

Now you can print in vivid color with clarity never before possible in a personal color printer. At 360 dpi resolution blacks are blacker and at 720/360 dpi the color output is the sharpest available.

- Incredible 720 dpi color printing, optimized with special coated paper
- 360 dpi black print resolution
- Prints up to 16 million colors
- Serial interface
- Includes Mac driver software and a TWO Year Warranty

$529

MACWORLD MW★★★★

ACCELERATORS

IN STOCK!

DAYSTAR DIGITAL

100 MHz Turbo 601 100MHz

$1489*

Compatible with Mac IIci, IIsi, IIvx, and Performa 600

The Turbo 601 provides the best of both worlds. The Turbo 601 allows you to run your current software up to twice as fast, and it lets your run powerPC accellerated applications at full PowerPC speed - from 7 to 11 times faster!

DayStar 100 MHz Turbo 601 ..... $1489*
Compatible with Mac IIci (D040 1048), IIsi (D040 1050), IIvx/vi/Performa 600 (D040 1052)
DayStar 100 MHz PowerPro 601 (D040 1043) $1489*
Compatible with Quadra 900/950, 700 and other with Quadra style PDS
DayStar 66 MHz Turbo 601 ..... $989
Compatible with Mac IIci (D040 1039), IIsi (D040 1049), IIvx/vi/Performa 600 (D040 1051)
DayStar 66 MHz PowerCard 601 (D040 1040) $635
DayStar Turbo '040 (D040 1018) $769

*After $200 Mail-in rebate from DayStar Digital.

PAPERPORT

BOCA RESEARCH INC

V.34 FAX AND DATA MODEM

$139

NEW! Macintosh V.34 28.8Kbps External BOCAMODEM. 28.8Kbps data modem/14.4Kbps Fax modem with V.42bis/MNP5. Fax and data software and cable for the Macintosh, on-line services, power adapter and telephone cable included.

B030 1007

$359

VISIONEER

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The fastest way to get paper into your Mac.

If it's on paper, it's PaperPort-able!

The simple, super-small input device that converts your paper documents into electronic ones. With PaperPort's direct links to word processors, OCR software (included!), printers and fax modems, you can file, edit, annotate, print and send your documents directly to others. (V025 1002)

MACWORLD MW★★★★★

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CLUBMAC REMOVABLE STORAGE

CLUBMAC IS DOING IT AGAIN!

Once again, the first 1000 ClubMac SyQuest 200MB External SubSystems sold will include TWO 200MB Genuine SyQuest cartridges. **OVER A $75.00 SAVINGS!**

TWO FREE CARTRIDGES LIMITED SUPPLY

FEATURING SyQuest® REMOVABLE TECHNOLOGY

MacUser ★★★★ February 1995

ClubMac 5.25" 200MB Removable

$468

Read, Write and FORMAT Compatible with 200MB, 88MB, and 44MB Cartridges.

C109 1090

INCREDIBLE DEAL! Tell Your Friends!

Backed by ClubMac's 30 DAY Money Back Guarantee

NOW SHIPPING WITH ACTIVE TERMINATION

SyQuest 5 YEAR Warranty* ON CARTRIDGES

GENUINE SYQUEST CARTRIDGES

Part Number	Media	Qty 1	Qty 10	Qty 20
S198 1010	44MB	$43ea	$42ea	$41ea
S198 1011	88MB	$48ea	$47ea	$46ea
S198 1012	200MB	$76ea	$74ea	$72ea
S198 1013	105MB	$51ea	$50ea	$49ea
S198 1014	270MB	$62ea	$61ea	$60ea

* Warranty after first year, handled by SyQuest.

C109 1090 **5.25" ClubMac 200MB** *includes Two FREE Formatted 200MB Cartridge (Limited Supply)* **$468**

C109 1002 **5.25" ClubMac 88MB** *includes FREE Formatted 88MB Cartridge* **$349**

While Supplies Last!

ZIP KILLER 105MB

105MB

ClubMac 3.5" 105MB Removable

$199

Backed by ClubMac's 30 DAY Money Back Guarantee

NOW SHIPPING WITH ACTIVE TERMINATION

C109 1005

- Fast 14.5ms average seek time
- 3,600 RPM rotational speed
- Data transfer rate up to 4MB/sec (sync)
- 105 Cartridge is compatible with 270 SyQuest Drive
- IN STOCK NOW!

FREE CARTRIDGE

C109 1005 **3.5" ClubMac 105MB** *includes FREE Formatted 105MB Cartridge* **$199**

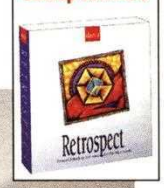
C109 1004 **3.5" ClubMac 270MB** *includes FREE Formatted 270MB Cartridge* **$468**

All SyQuest drives include SCSI Director formatting software, ONE FREE Formatted Cartridge, necessary cables for "plug-and-play" and documentation. All SyQuest drives include a 30-Day Money Back Guarantee and TWO Year Warranty. All SyQuest cartridges include a FIVE Year Warranty (warranty after the first year is handled by SyQuest).

DAT AND OPTICAL STORAGE DEVICES

ClubMac Tape Backup Drives

BUNDLED WITH Retrospect v2.1 Backup Software



C109 5011

$699

Backed by ClubMac's 30 DAY Money Back Guarantee

2.0GB

NOW SHIPPING WITH ACTIVE TERMINATION

4.0GB

FREE DAT TAPE

TWO Year Warranty

$899

C109 5010

Verbatim

SONY

DAT MEDIA

V010 1080	Verbatim 90M Cartridge	$12
S100 1012	Sony 90M Cartridge	$12
V010 1043	Verbatim 120M Cartridge	$29
S104 1008	Sony 120M Cartridge	$29

OPTICAL MEDIA

V010 1021	Verbatim 1.3GB Optical Cartridge	$12
S100 1005	Sony 1.3GB Optical Cartridge	$12
V010 1043	Verbatim 230MB Optical Cartridge	$29
S104 1008	Sony 230MB Optical Cartridge	$29

ClubMac 5.25" OLYMPUS 1.3GB

- 3.5" Olympus Optical Mechanism
- 29ms ave. seek time
- 3,500 RPM rotational speed

1.3GB

$1499

C109 5022

Backed by ClubMac's 30 DAY Money Back Guarantee

NOW SHIPPING WITH ACTIVE TERMINATION

CLUBMAC 3.5" OLYMPUS 230MB

- 3.5" Olympus Optical Mechanism
- 28ms ave. seek time
- 4,200 RPM rotational speed

230MB

MacUser ★★★★ February 1995

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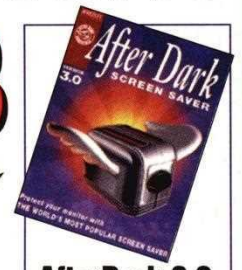

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4300MB Atlas 8ms	C109 1122	$1499	C109 1121	$1559

	Part No.	Internal	Part No.	External
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420MB Trailblazer 14ms	C109 1204	$185	C109 1205	$245
540MB Fireball 12ms	C109 1200	$199	C109 1201	$259
730MB Lightning 11ms	C109 1154	$229	C109 1102	$289

Unformatted Capacity	Model	Description	Part No.	Internal	Part No.	External
3.5" HALF HEIGHT & LOW PROFILE (LP)						
2.4GB	32430N	Hawk 2 LP	C109 2211	$939	C109 2112	$999
4.3GB	15230N	Hawk 4	C109 2212	$1139	C109 2113	$1199
2.5GB	32550N	Barracuda 2 LP	C109 2203	$1069	C109 2109	$1129
4.3GB	15150N	Barracuda 4	C109 2207	$1499	C109 2106	$1559
5.25" FULL HEIGHT						
9.1GB	410800N	Elite-9			C109 2110	$2599

BARRACUDA 4
8.5ms average seek time
7,200 RPM

Seagate 5 Year Warranty

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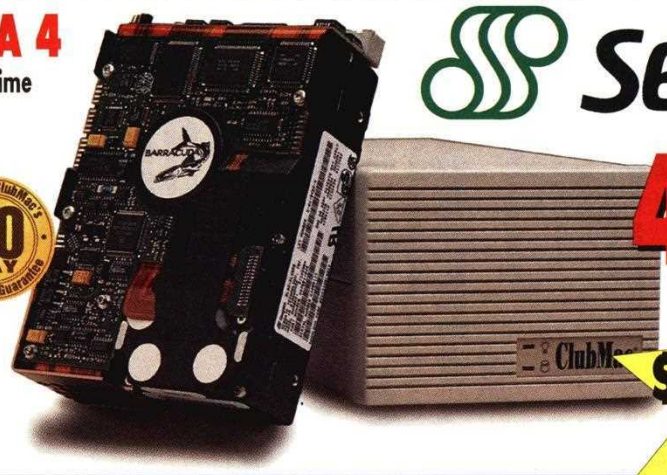

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CD AutoCache PhotoCD

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C109 9546

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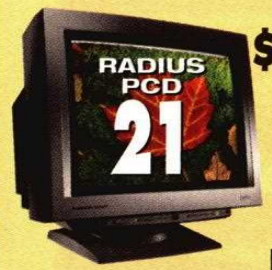

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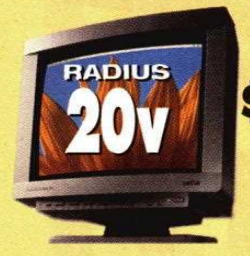

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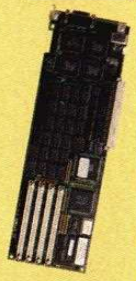

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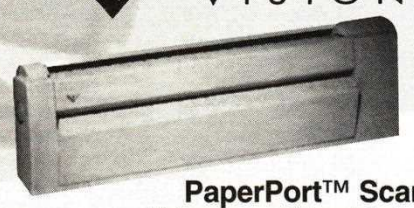

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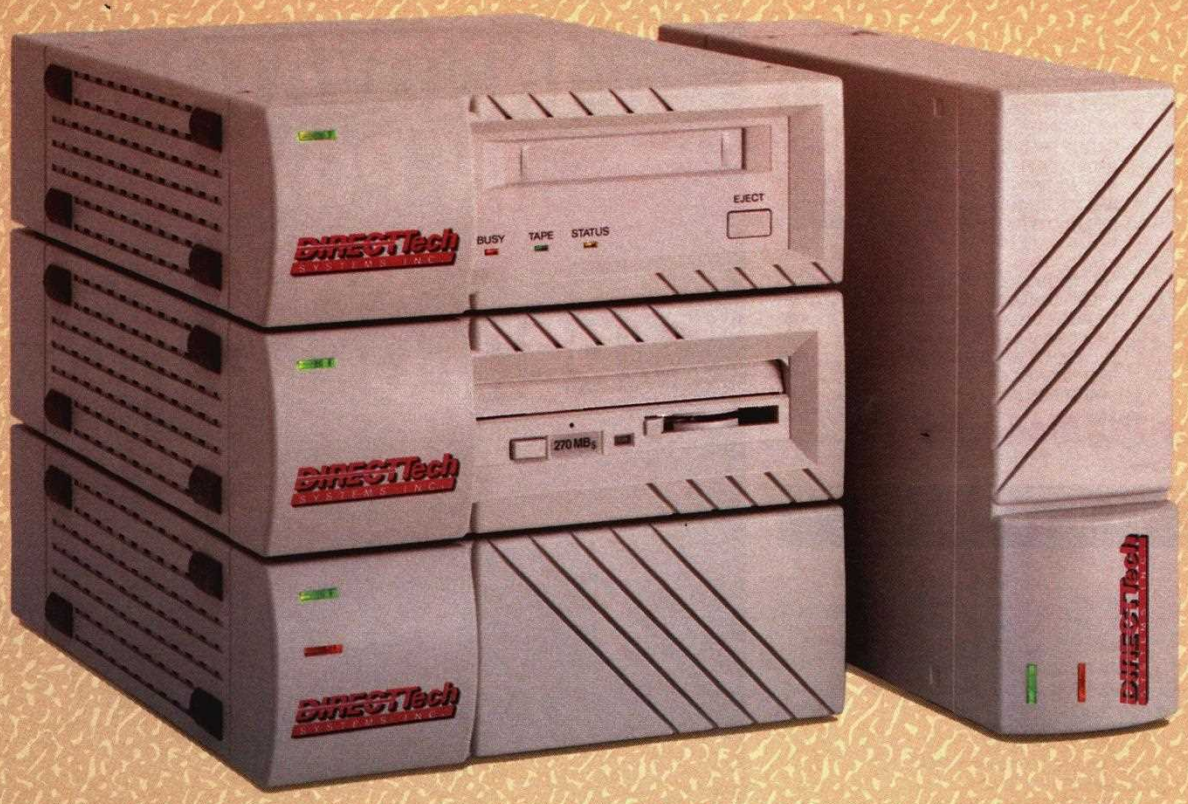

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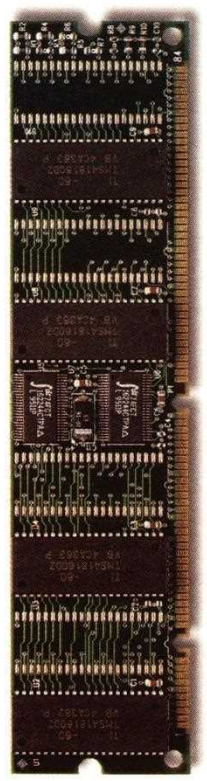

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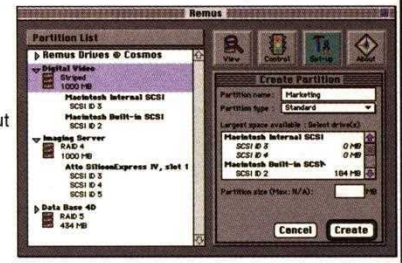

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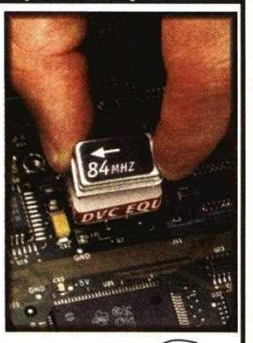

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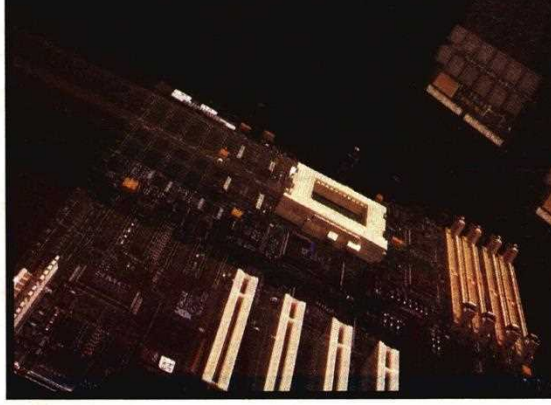

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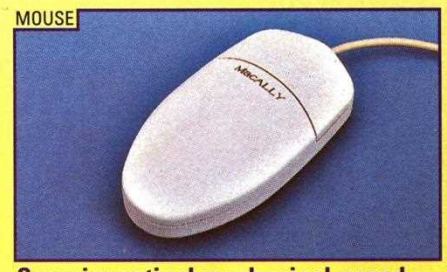

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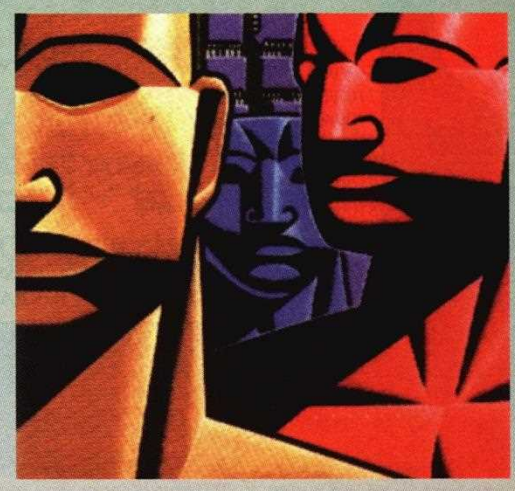

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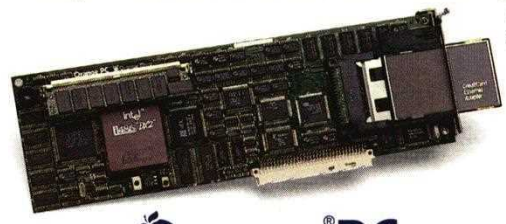

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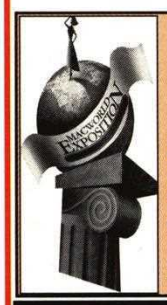

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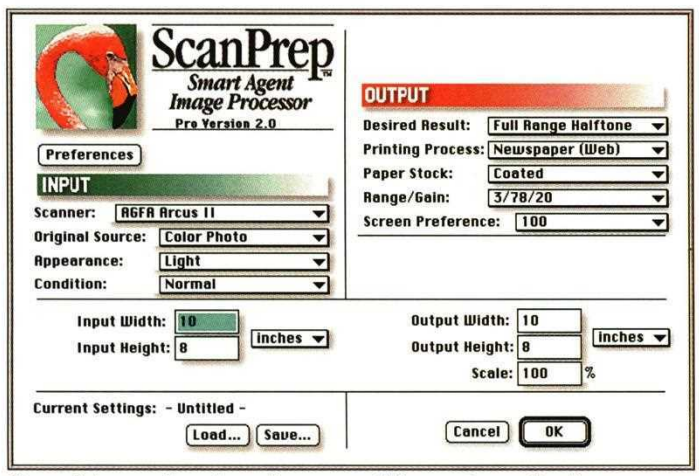

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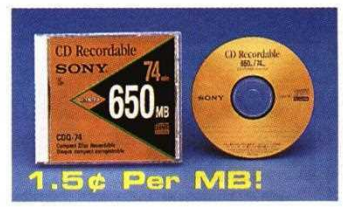

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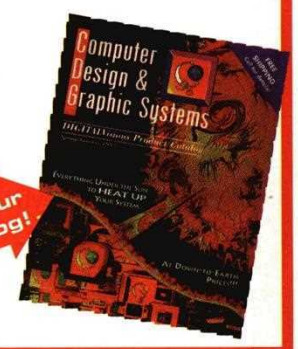

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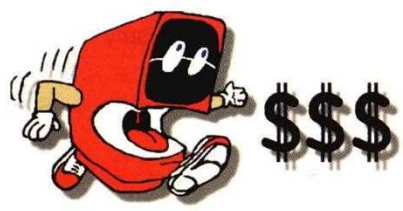

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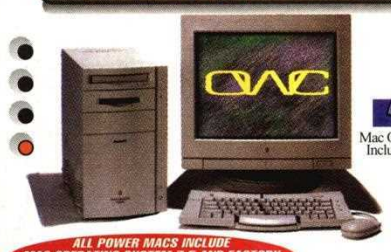

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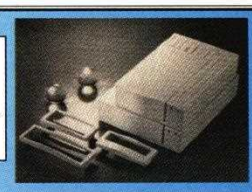

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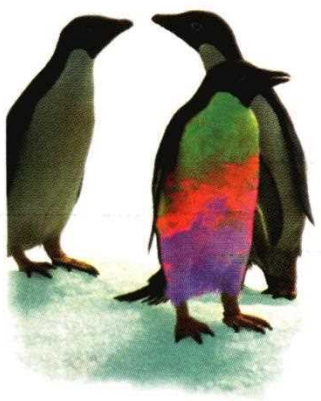

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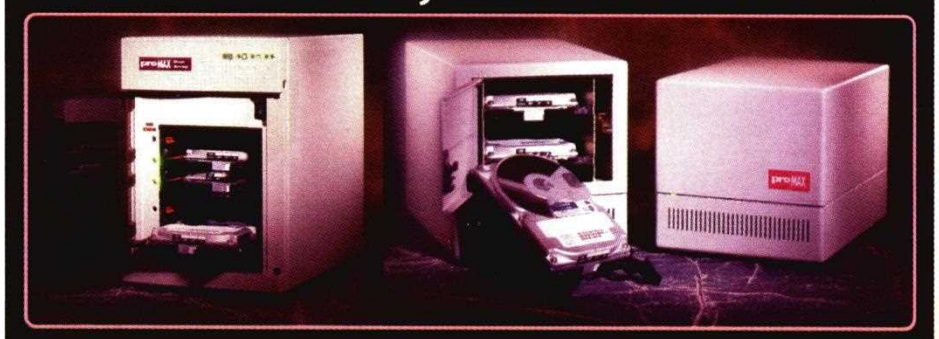

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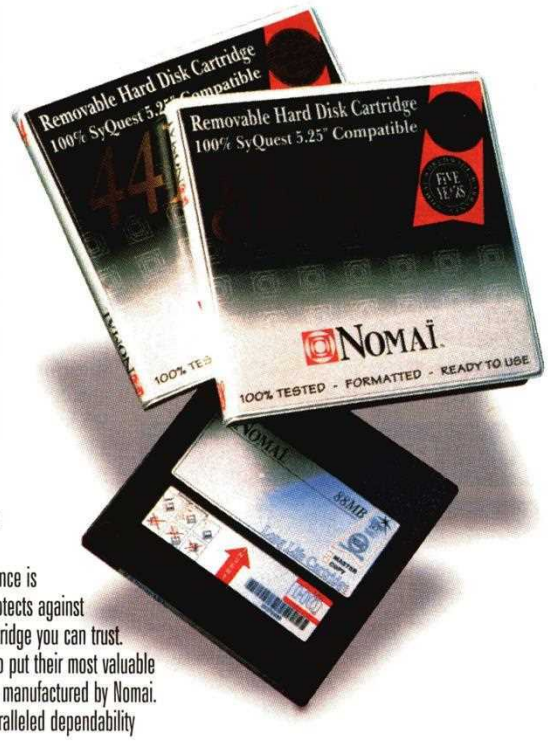

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SyQuest 88C	$250	$290	$315	
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Includes external drive, 25/50 SCSI cable, Mac SW, terminator.

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Fujitsu-230	230MB	3.5"	$569	$619	
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Sony 1.3GB	1.3GB	5.25"	$1699	$1749	

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730MB	10ms	$215	$275	$300	
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2.4GB	B'cuda 2, 9ms	$1039	$1099	$1149	
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Sony 20SE	20in, .25mm, 1280x1024	$1889	
NEC 17XE	17in, .25mm, 1280x1024	$979	
Apple 15	**15in, .25mm, 1024x768**	**$399**	SALE
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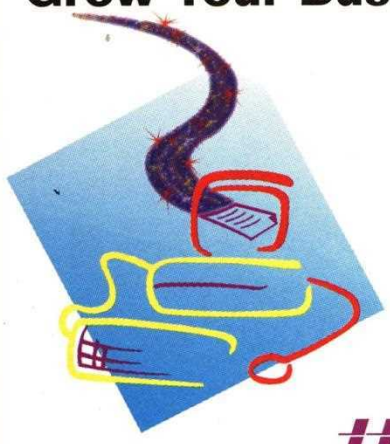

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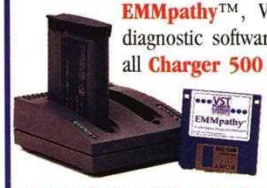

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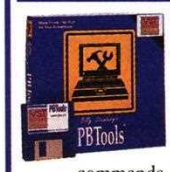

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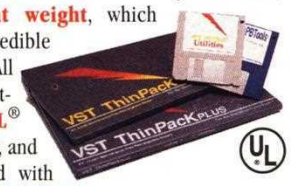

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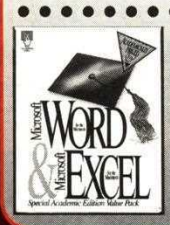

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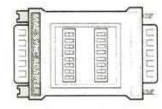

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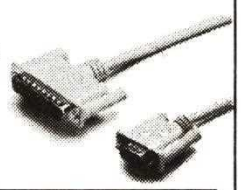

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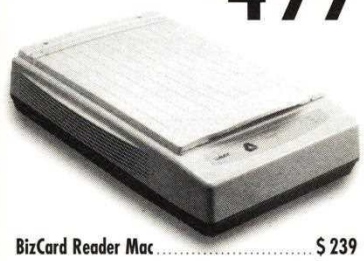

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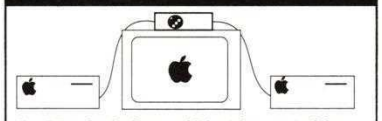

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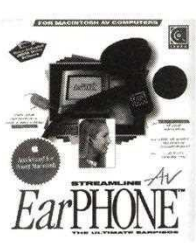

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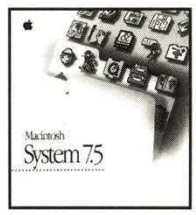

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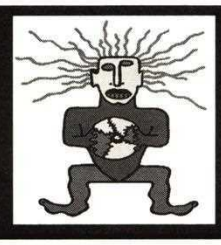

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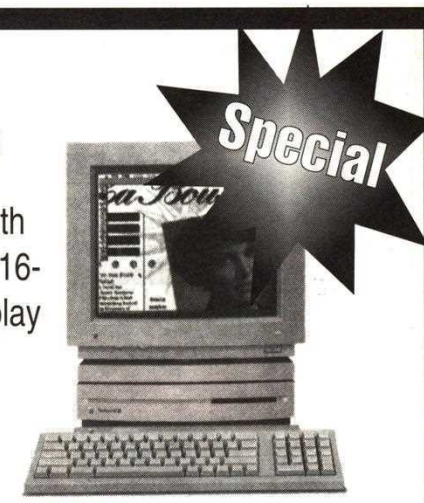

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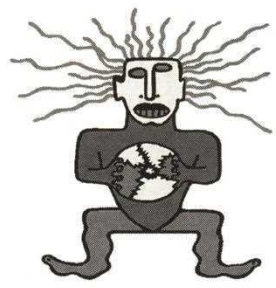

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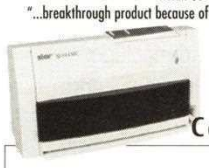

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Classified

QuickMail

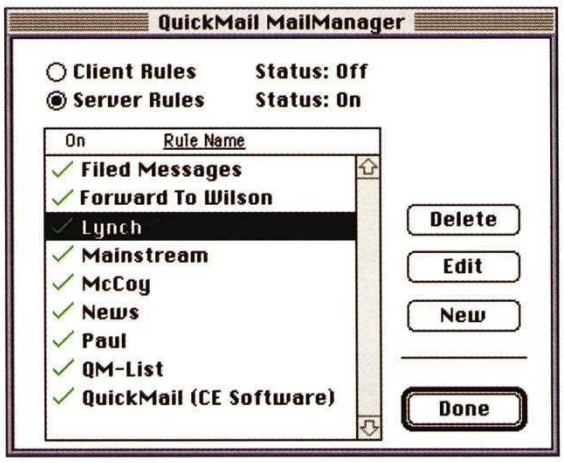
From Page 1

Both Mac and Windows clients will gain drag-and-drop features. Users will be able to drag messages in the main QuickMail window onto local folders or up to the print, save or delete icons. From the Finder, files can be enclosed with open messages by dragging, and text can be dragged among open applications and e-mail.

Users will be able to set a mix of font, size, color and style attributes in the body of each message.

The current system extensions, QuickInit and CEToolbox, will be eliminated, the company said. Their functions will be integrated into the QuickMail 3.5 application and a new stand-alone, nonmodal QuickConference add-on for interactive conversations. Version 3.5 will reorganize the client folder structure too, so QuickMail will not have to store all mail and forms in the System folder.

QuickMail 3.5 will include a new password module that controls password aging, minimum lengths and settings to mandate a mix of letters and numbers. Managers will be able to reclaim server space by deleting old messages and log entries. A free gateway to America Online will be included; CE said it expects an eWorld gateway to follow soon after.



Building upon client-based rules, QuickMail 3.5 will offer a server-based MailManager that reads a user's e-mailbox while on the road; actions can include forward, reply and delete.

CE's interim winter upgrade, QuickMail 3.7, will add a multiline Telecom Server component and multiprotocol links to clients. The Version 3.7 server, which will run native on Power Macs, will be able to use TCP/IP to communicate to its clients.

CE may base this feature on MacTCP rather than Apple's new Open Transport. "We have every intention of supporting Open Transport in Version 3.7 but will wait until Apple releases an official version [that is the same on all Macs]," Kramer said. The current version is not as stable as CE would like, he said. Likewise, the Telecom Server will use the older Macintosh Communications Toolbox.

The QuickMail 3.7 client will also be compatible with the CommToolbox, adding the ability to dial in using the LAN client software. Clients will be able to compose messages off-line, automatically compress and decompress an unlimited number of enclosures, and enclose folders within messages.

CE said it hopes to deliver QuickMail 4.0 by April 1996. The company has pegged this version to provide administrative enhancements, such as limits on enclosure size and total mail space per client. It will add usage-analysis tools, multiple public folders for discussion groups and improved forms. Support for TCP/IP access will arrive for Windows clients in Version 4.0.

QuickMail 3.5 prices will start at $449 for a five-user pack. Owners of QuickMail 3.0 or 2.6 who upgrade before Sept. 15 will pay $3 or $13, respectively, and will receive Version 3.7 free. Until Aug. 30, CE is offering a one-year subscription plan to owners of versions 3.0 or 2.6 for $6.25 or $14.25, respectively.

CE Software Inc. of West Des Moines, Iowa, can be reached at (515) 221-1801 or (800) 523-7638; fax (515) 221-1806. □

Avid

From Page 1

The unit will sport six NuBus slots using technology licensed from Second Wave Inc. of Austin, Texas; Avid's current setups use an external six-slot expansion chassis. The systems will also use a standard Apple floppy drive and support an optional double-speed CD-ROM drive.

Analysts said that, while using an Apple-produced board, Avid's increasingly integrated design is taking aim at the VideoVision Workstation, a forthcoming Mac clone from Radius Inc. directed toward video production (see MacWEEK, Jan. 9, Page 1). They said Avid is also seeing increased competition from Data Translation Inc.'s Media 100 nonlinear editing system.

"[Media Processor] signals a new round of competition for the video business," said video industry analyst Gary Schultz at Multimedia Research Group of Sunnyvale, Calif. He said Avid has a high level of technology and has concentrated on systems aimed at the high-end of the video production market, leaving openings for entry-level and midlevel solutions. "Nobody blows Avid out of the water, but will [Avid] pay more attention to the [lower-end] corporate-video guys?" Schultz asked.

Avid said the release of its new $14,995 3D Effects module will coincide with that of the Media Processor. Available for selected Media Composer systems, the module will use a NuBus-based 3-D accelerator and permit the application of real-time 3-D effects.

Users will also benefit from an upgrade to Avid's Media Composer software, slated for an end-of-the-month release. Version 5.5 will boost the program's performance when rendering real-time effects, including the handling of multiple effects in a many-layered sequence. Version 5.2 for both 680x0 and PowerPC Macs shipped in May.

Version 5.5 will also support a software-based QuickTime compressor-decompressor (codec) for JPEG image compression and will not require the installation of Avid's Media Composer compression board. The company said the codec will let users offload compression jobs onto any Mac and free the primary workstation for editing tasks.

Avid Technology Inc. of Tewksbury, Mass., can be reached at (508) 640-6789 or (800) 949-2843; fax (508) 640-1366. □

NEWSMAKER

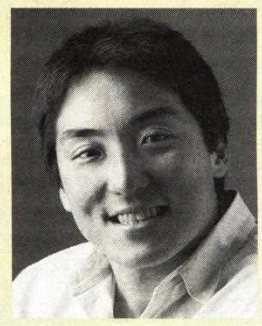
He's back: Kawasaki returns to hawk Mac development

By Mark Hall

As part of its effort to create a revival among third parties, Apple has announced the appointment of Guy Kawasaki as an Apple Fellow for developer issues.

Comparing his new job to the launch of the Mac in 1984, Kawasaki told MacWEEK: "There's a great need for developer loyalty again. It's getting tough.

"The developers who believe, believe," he said. "Back in 1984, the developers who asked us for a contract, for quid pro quo co-marketing, for R&D funds, all that stuff, never produced great software. The people who created great software were the people who we almost had to hold back. People either get it or they don't."



"My appointment is either a sign that Apple executives don't read my column or they can see that I truly do love Macintosh and I want to make it better ... "

Using the example of AutoDesk Inc., which has been unwilling to port AutoCAD to the Power Mac, he said: "My job is either to make AutoDesk believe or find the next AutoDesk. Ideally, I do both."

Reacting to developer criticism that Apple often enters markets best left for third parties, Kawasaki said: "It's very easy to understand why a developer would get paranoid when Apple decides to create a competing product. But in most cases, Apple's product is usually inferior to a third-party product. What Apple does is validate the market."

Although he has publicly criticized various Apple technologies, such as Newton and QuickDraw GX, Kawasaki said it was the implementations, not the concepts, he disliked. He said Apple management must have taken his critical views positively. "My appointment is either a sign that Apple executives don't read my column [in Macworld] or they can see that I truly do love Macintosh and I want to make it better, not just rip it."

Kawasaki said that much has changed since he left Apple in 1987, but he believes the company's "DNA" is the same. However, he admitted to a lack of knowledge in key product areas such as OpenDoc and the Common Hardware Reference Platform, which are critical to Apple's plans for developers. □

Mactivity

From Page 1

makes Apple more provocative for application development," said John Guertin, product manager for NetManage of Cupertino, Calif.

- **Neon Software Inc.** The company will offer Version 3.0 of RouterCheck, its tool for monitoring AppleTalk routers. Neon, based in Lafayette, Calif., boosted RouterCheck's diagnostic and reporting capabilities so the tool can identify which router on a LAN is propagating incorrect information. RouterCheck costs $649; Version 2.0 users can upgrade for $100, and Version 1.0 users can make the leap for $150.
- **Sun Microsystems.** The Mountain View, Calif., company plans to debut at Mactivity the Mac version of HotJava, Sun's Internet multimedia player for use with World-Wide Web browsers.
- **SoftArc Inc.** The Markham, Ontario-based company plans to release a Power Mac-native client to its FirstClass messaging system. Users can upgrade to the native FirstClass client, Version 2.7, free. SoftArc plans to announce a year-end release for a native Power Mac FirstClass server.
- **AGE Logic Inc.** AGE Logic intends to ship XoftWare for Mac, its X Window System software for accessing Unix applications across a network. The software from the San Diego company will be Power Mac-native and will cost $295 for a single-user license.
- **Stalker Software Inc.** The Larkspur, Calif., company plans to show CommuniGate. The suite of integrated LAN messaging tools, due in August, will let users send fax, e-mail or voice messages and manage them all within one program. The suite will comprise modules priced from $100 to $600; a complete set will cost $1,300.
- **StarNine Technologies Inc.** The Berkeley, Calif., company intends to show its recently released ListStar mailing list server.
- **Cyno Technologies Inc.** The San Jose company intends to release this week Factor2/ARA. The remote-access security tool will allow Apple Remote Access server administrators to control access through a user-authentication system. The application will cost $895 for server software and a 10-user license; a license for 10 additional users will cost $495. □

This week James Staten will file a daily report from Mactivity/Web. His updates can be found on-line on ZiffNet/Mac.

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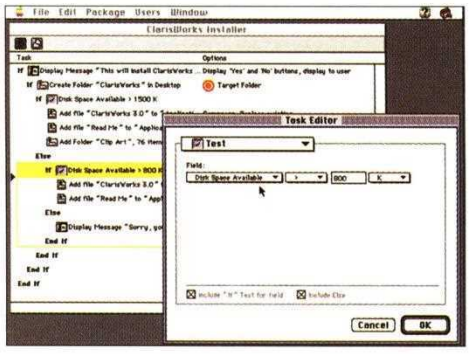
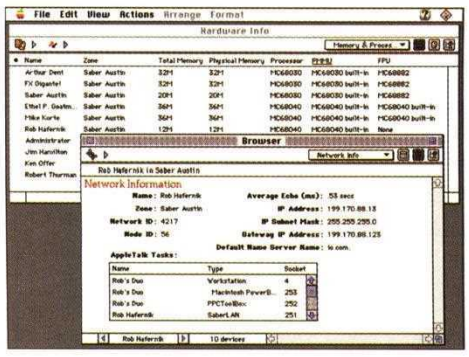
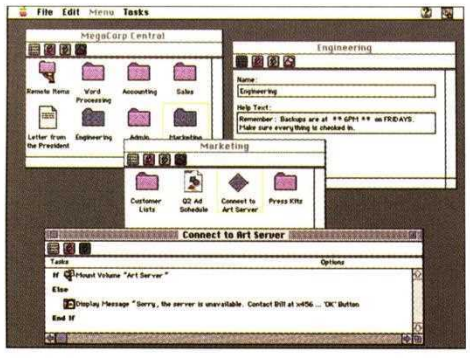


Software Distribution: Drastically reduce the time required to install new software. Use a flexible scripting language to create installation "packages" tailored to groups of users. Distribute large packages (20MB and up is no problem) and schedule them for any time and date you specify.



Hardware and Software Inventory: Easily gather information from Mac's and SNMP devices on your network. Collect 300 items of information including machine type, physical memory and monitor type. Inventory applications, their version numbers, partition sizes and finder flags.



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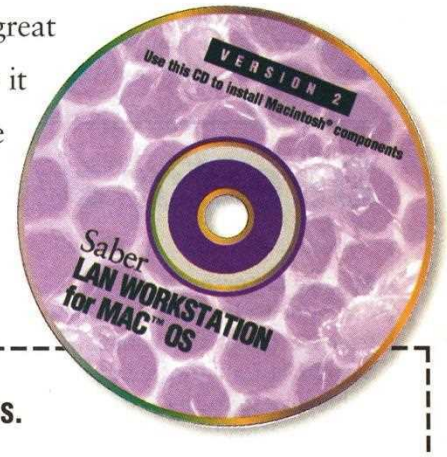

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Eilers

From Page 1

market share to 25 percent from its current 10 percent. Instead, the company plans to swell profits by selling more products and services to its installed base of 16 million users worldwide and rely on Mac OS licensees to gradually increase Mac market share.

Previously, Apple relied on increased sales across the board to boost its share of the personal computer hardware market. But the company was barely detectable on the business market's radar screen. Indeed, despite sizable market share in publishing, higher-education and K-12 markets, Apple's share of the total PC market slipped to a record-low 8.5 percent last year, according to Dataquest Inc. of San Jose, Calif.

The company's new marketing message, Eilers told MacWEEK, is to find existing customers and "service them, service them, service them."

Company executives said they hope to increase revenue through the sales of forthcoming lower-cost Power Macintoshes, software, content, services and support, and consumable items to existing customers. They believe that by obtaining a higher share of customers' information technology spending, Apple will establish lifelong relationships with chosen users.

In particular, Apple wants to build on its already strong market share in four key segments: home/small business, publishing, K-12 and higher education.

Analysts applauded the change in strategy. "It makes sense for Apple to focus on the existing market because of Microsoft's heavy marketing now," said Frank Catalano, principal of Catalano Consulting of Seattle. "Until Windows 95 becomes real, it's very hard to move above that noise level. It's like trying to market a new religion when people think the Second Coming is right around the corner."

Not everyone agrees, and within Apple there has been considerable rancor over the strategy's merits. Apple Japan President Frank Seiji Sanda resigned last week, reportedly over objections to the plan (see story, Page 4).

Apple's marketing machinations provide a backdrop for a high-stakes OS showdown between Apple and Microsoft.

Redmond, Wash.-based Microsoft has already spent $70 million on a campaign promoting Windows 95, and analysts said the company will eventually spend $150 million to $200 million advertising the software. Third-party developers and dealers are expected to sink at least another $200 million, easily making Windows 95 the most heavily pitched computer product ever.

Apple, meanwhile, is preparing to launch Windows 95 Assault, a national advertising blitz designed to try to defuse Windows 95. The television and print campaign, which will take on the aggressive tone of recent Apple ads challenging Hewlett-Packard Co. in the printer arena, kicks off this month and runs through December. Eilers told MacWEEK the campaign marks a departure from the "cultural reticence" of Apple to slam competitors in ads.

"It's nice to see Apple have an in-your-face attitude," Catalano said.

Apple USA President Jim Buckley said he expects the changes in strategy plus feistier advertising will bump up Macintosh sales during the last four months of the year. "Sales and market share should be up," he said. "[Apple's comparative growth] will depend on the overall market, which is growing tremendously." □

Update

From Page 1

Apple is reportedly working on but may never complete.

Sources said the emulator component of Connectix Corp.'s Speed Doubler has been held up by the same problem.

System 7.5 Update 2.0 will provide QuickDraw 3D, Open Transport 1.0.5 or later, LaserWriter 8.3, AppleShare Workstation 3.6, QuickTime 2.1, Sound Manager 3.1 and Apple Guide 2.0, sources said. It will also reportedly update several standard utilities and system extensions.

Sources said Apple Guide 2.0, a major update, will speed nearly all functions of the native on-line help system. The new Apple Guide will be able to open more than eight guide files at once. Developers may use this additional functionality to not only enable more active guides at once but also empower each guide with more externally provided functionality.

Sources said Sound Manager 3.1 and the Sound 8.0.4 control panel will add audio-compression options, including the Interactive Multimedia Association's 4-to-1 compression standard for 16-bit sound. Together they will have much better performance on RISC Macs and will directly import .WAV and .AU sound files. QuickTime 2.1 will take advantage of these features.

The already released LaserWriter 8.3 supplies QuickDraw GX-like desktop printer icons and improved spooling without GX's overhead. An updated set of printer descriptions, including files for Apple's latest printers, are expected. Maintenance releases of QuickDraw GX and the WorldScript I and II extensions will also be bundled.

AppleShare Workstation 3.6, the dramatically faster version that works with AppleShare 4.1 and compatible servers, adds up to 128 Kbytes each of read-ahead and write-behind caches for Finder copies (see MacWEEK, April 24, Page 12).

Update 2.0 will reportedly borrow from the PCI Macs' System 7.5.2 the PowerPC-native Resource Manager, which will speed all programs, and Display Manager 2.0, which controls settings for multiple-resolution monitors. Several system and Finder bugs will be fixed as well, sources said.

According to sources, several existing utilities will be packaged with the update, including SimpleText 1.3, which will support embedded QuickDraw 3D images. Other updates will fix specific bugs: File Sharing Extension 7.6.2 is expected to work better with the combination of CD-ROMs and disk-compression applications, PC Exchange 2.0.5 will handle 270-Mbyte SyQuest cartridges, and CloseView 7.2.1 will work with the new Display Manager.

Sources said Apple is early in the development process of the new package and will likely add or drop features over time.

Apple declined to comment on unannounced products. □

Director audio toolkit

By Cate C. Corcoran

Macromedia Inc. and ION, an interactive music CD company in San Rafael, Calif., are uniting their technologies into a tool kit aimed at facilitating widespread development of discs combining CD audio and multimedia content.

The Macromedia Director Enhanced CD Toolkit, slated for release in the fall, will be a set of cross-platform authoring tools and modifiable examples for producing enhanced audio CDs that comply with the Blue Book specification, a standard recently endorsed by the Record Industry Association of America.

A Remote Control Builder tool will let developers customize the interface through which users play audio CDs from their computer desktops. An Event Synchronizer tool will synchronize CD audio with lyric display, animation and other multimedia events.

The Asset Analyzer tool will devise disc layout and media usage plans. Developers will be able to optimize storage resources with the Install/De-install tool that will copy and delete files between a CD and the user's local hard drive.

The tool kit will be available on-line free to Director users for the first 90 days of release, Macromedia said.

Macromedia Inc. of San Francisco can be reached at (415) 252-2000 or (800) 288-4797; fax (415) 626-1502. □

Eilers' division taking shape

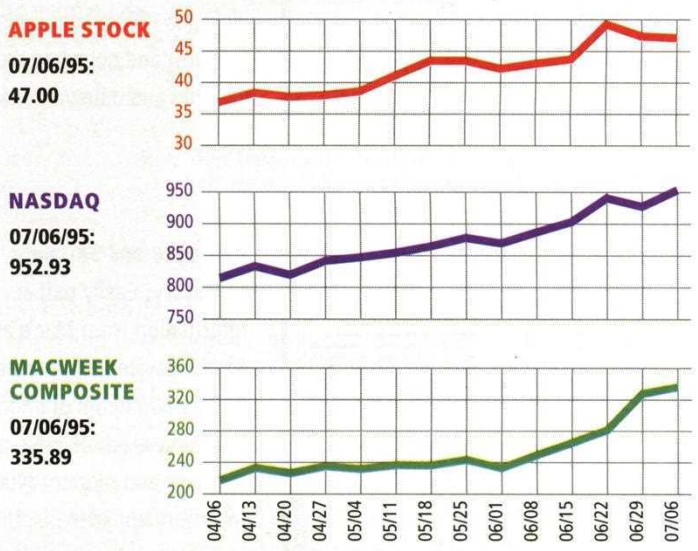
Apple's Worldwide Marketing & Customer Solutions division, created in April to bring the company closer to customers, began to take final shape last week.

Sources said all of product marketing will be centralized into a global organization, headed by Vice President Brodie Keast. Marketing groups within geographical regions will report to WWMCS but also report to their respective regions.

The division, headed by Senior Vice President Dan Eilers, has created a committee to set prices competitive with rival systems, deliver products and services to users, and devise marketing plans.

Among those reporting to Eilers are: Keast; Mike Dionne, vice president of worldwide platform marketing and marketing services; Don Strickland, vice president of business and government. □

StockWatch



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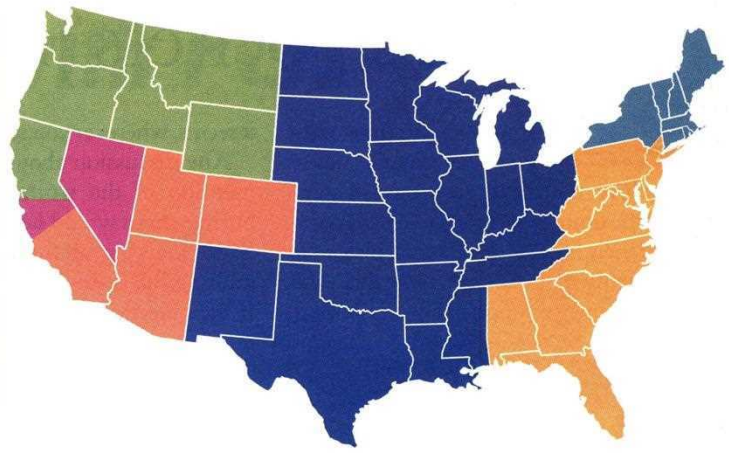

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Bill's pockets jingle, jangle, jingle

If spring is the time when a young man's fancy turns to love, then these early days of summer are the time when those who have accumulated their fill of that asset turn instead to more weighty matters, such as wealth. And there's evidence to support this proposition, it seems, wherever you turn lately.

Any discussion about wealth without a mention of the world's most successful businessman would be incomplete. So the Knife joins a grateful nation this week in saluting Bill Gates for his accomplishment. If the object of the game is to accumulate the most coin, then he has clearly won this round hands down.

In more civil times we would all be at our desks penning congratulatory notes. Fortunately for us all, civility is no longer a prerequisite for much of anything, so feel free to dash off an e-mail instead. You could even send a small token of your awe. Just keep in mind that "I'm No. 1" T-shirts are inappropriate for any accomplishment, and large postal packages raise eyebrows these days.

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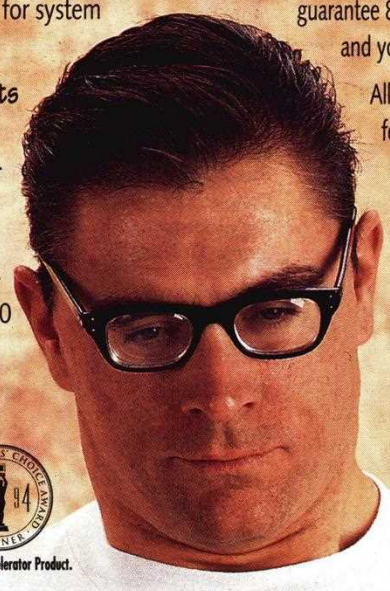

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The Morris method

If you were wondering where Radius was going to find the cash to fund its aggressive clone ambitions, you were not alone. As it turns out, a select group of American investors purchased about $23 million worth of Radius stock with offshore dough.

To hear Montgomery Securities tell it, the money is slated for general working capital. To hear the Knife tell it, this money will come in mighty handy in the course of ramping up its graphics workstation business and for such small matters as paying IBM and Ingram for their related Radius Mac clone services. On top of everything else, Radius hopes to announce shortly a more mainstream Mac based on the 8100/110.

Then there's the issue of the anemic Radius balance sheet. The Knife's sources observe that this rather substantial cash infusion comes just in time to save Radius CEO Chuck Berger's buns. It seems he has frittered away his allotted nine lives at the company he made more famous than Apple for its inability to capitalize on technological innovations.

So with this reprieve, he is undoubtedly under incredible pressure to deliver Radius Mac clones in quantity. Otherwise, some say, stick a fork in him; he's done.

Slow play

Berger must envy Apple's Michael Spindler. Those who own Apple stock are remarkably docile in the face of potential revenue that is forever unrealized due to Apple's legendary product demand forecasting ineptitude. Perhaps they honor consistency instead. If that is the case, the news that those new PowerBooks won't be available at their Aug. 28 introduction will earn Spindler a fat bonus.

Those loyal customers ready to buy a new Apple laptop will have to stay ready, possibly until October. Those whose loyalty lies elsewhere will, of course, take their business to any one of the legion of companies that can both design attractive laptops and produce them in sufficient quantity to meet demand. And with sources claiming to have seen IBM-labeled CD-ROMs containing the Mac OS' Two Face logo, the impatient among us won't be giving up much when they give up on Apple.

Pregnant pause

When Adobe went public with the news that Frame was its acquisition du jour, it held a telephone news conference for the convenience of the industry press. If you'd been listening in, you would have been able to hear the blood drain from CEO Warnock's face when he was asked if Macromedia was targeted as Adobe's next conquest. □

Warnock paused before answering no. If you'd heard this and contacted the Knife at (415) 243-3544, fax (415) 243-3651, Internet (mac_the_knife@macweek.ziff.com), AppleLink (MacWEEK) or CompuServe/ZiffNet/Mac, you'd have a MacWEEK mug by now.

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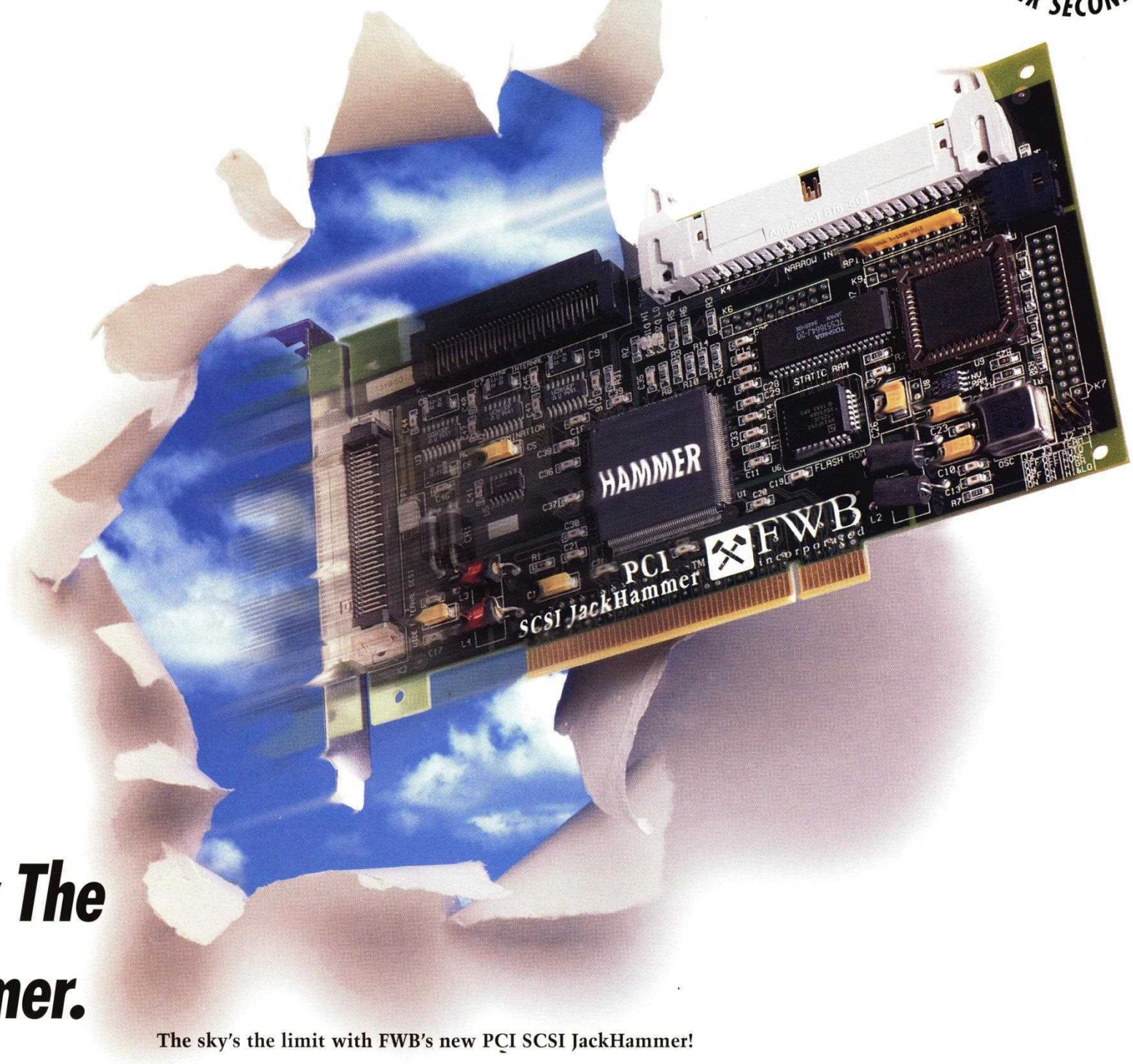

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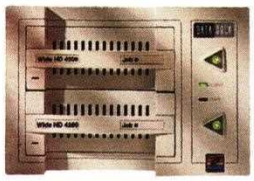
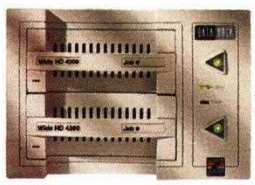
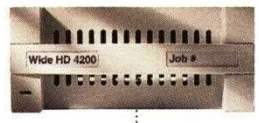
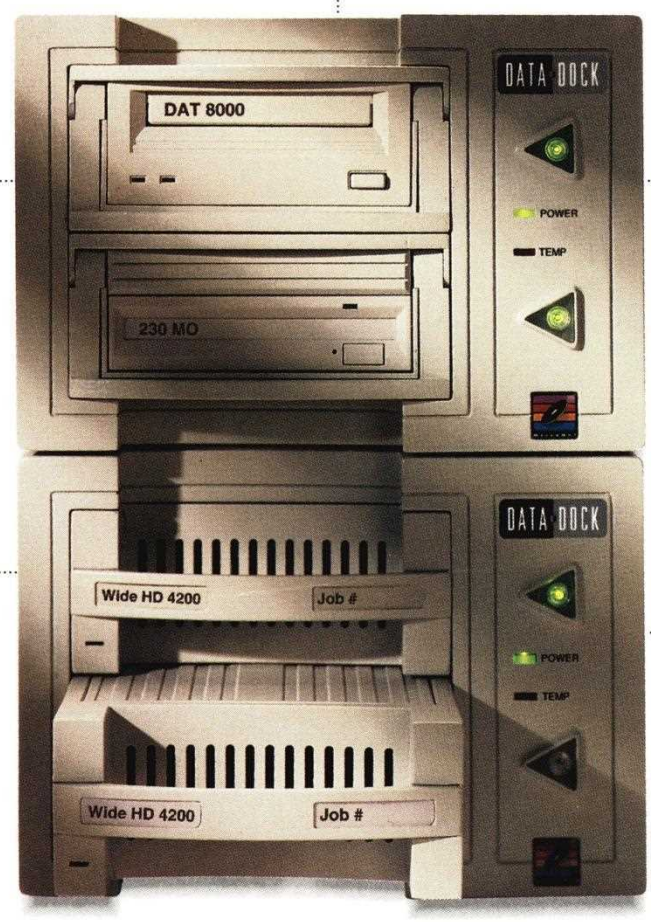


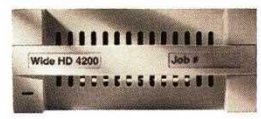
Multiple DataDock sites provide an infinitely scalable desktop storage solution. Additional sites can be added as your production demands increase.

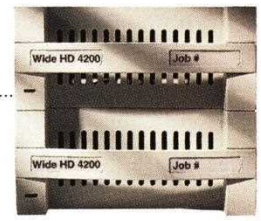




Integrated module and project icon labeling system.

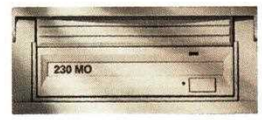


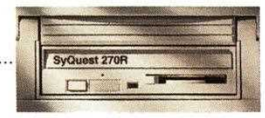


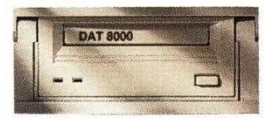


Today's fastest hard drives and Raven Pro drive arrays with 2GB to 8GB capacity can transport entire projects efficiently from work-station to workstation.

DataDock's intelligent backplane and intuitive software interface provide automatic mounting of drive modules. Dismounting is as convenient as a drag to the trash. Drives are locked in position during operation, spin-up and spin-down to prevent human error.







DataDock accommodates any combination of MicroNet 3 1/2" hard drives, Raven Pro drive arrays, MO, SyQuest or DAT modules.

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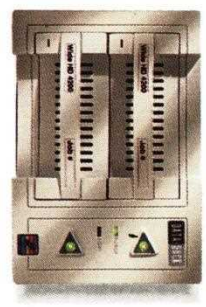

DataDock Desktop (platinum) in vertical orientation

DataDock Desktop (black) in vertical orientation

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